DEFENSE PRODUCTIVITY SUPPORT OFFICE (DPSO) PRODUCTIVITY PROCESS IMPROVEMENT PROJECT

Defense Enterprise Integration Services

Final Technical Analysis: Comprehensive Policy of Work Measurement Recommendations

23 February 95

LOCKHEED MARTIN

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ATTN: Mr. Bob Payne, Action Officer

SUBJ: Contract Number: DCA 100-94-D-0018

REF: DO79, Defense Productivity Support Office (DPSO) Productivity Process Improvement

Lockheed Martin is pleased to provide the Final Technical Analysis: Comprehensive Policy of Work Measurement Recommendations (CDRL A005), subtitled, "Managing Performance or Re-Inventing the Defense Productivity Program," for the referenced delivery order.

Please refer any questions regarding our enclosure to the undersigned at (703) 671-3400, ext. 386.

Sincerely,

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encl: as

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DEFENSE PRODUCTIVITY PROCESS

IMPROVEMENT PROJECT

BASELINE ANALYSIS

and

IMPROVEMENT RECOMMENDATIONS

TASK 2: COMPREHENSIVE REPORT

OF FINDINGS AND RECOMMENDATIONS

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EXECUTIVE SUMMARY

This document is a comprehensive report on the first phase of the Defense Productivity Process Improvement (DPPI) Project. The purpose of the project is to improve the current Defense Productivity Program in general and the Work Measurement/Labor Standards program in particular, along with the necessary supporting automated information systems.

The DoD Productivity Program was established formally in 1975. Since that time, program changes have not kept pace with major changes in the defense environment, culture, technology, and management. As a result, the program now suffers from policy deficiencies and infrastructure inadequacies. One particular stimulus for this project was a series of Inspector General (IG) studies and reports noting deficiencies and calling for improvements in the use of Work Measurement and Labor Standards by DoD service components. A second motivating factor was an IG evaluation of DoD management improvement programs and tools which pointed out their overlapping, redundant, and misused characteristics and which called for centralized coordination and more effective application of these programs and tools. This comprehensive review is a necessary first step toward modernizing the productivity program to make it work better and cost less.

The first phase of the DPPI project reviewed and analyzed the current Defense Productivity Program processes and designed proposed improvements. The analysis involved modeling the current process (As-Is) and building a case for change with opportunities and recommendations for improvement in the program. In light of the current Government and DoD concern for performance and results in terms of productivity efficiency, output effectiveness, value-added work processes, and final outcome (e.g. National Performance Review (NPR) and Government Performance and Results Act (GPRA)), it was clear that the Defense Productivity Program needed to be redesigned in terms of enhancing total performance -- both at the DoD component level and for each manager at any level within DoD. It was also important that the implementation of any approach to enhance performance would support managers in their normal work efforts and would not create an extra layer of work to be done.

The proposed redesign of the productivity program was modeled (To-Be) and formulated first as a unified concept: "Managing Performance" to achieve expected results. This unified concept (composed of activities which develop a performance plan with measurable expectations, execute the plan, assess performance results against the expectations, enhance performance in response to exceptions or deficiencies in performance, and support managers in these processes) is applicable to any manager at any level from the total organization to the individual. Next, the concept was applied to the DoD as a unified initiative of Defense Performance Management (DPM).

This first phase of the project concludes with recommendations and next steps for establishing the redesigned Defense Performance Management Initiative. The first three recommendations address the need for programmatic shifts to establish the movement from productivity to performance as the way DoD will manage and enhance its work.

The recommendations for DoD-wide programmatic shifts are:

1. For each of the major Defense Performance Management activities (plan, execute, assess, enhance and support), establish a DoD "focal point" and "focal emphasis". Major emphases would include:

   (a) the development of an Executive Management/Decision Support System as part of the Planning, Programming, and Budgeting System (PPBS) to support managers in developing performance plans, tracking and assessing performance, and reporting on performance consistently across DoD and through consecutive budget years;
   (b) an incentive policy for improving performance;
   (c) instituting continuous improvement programmatic cycle as part of on-going management; and
   (d) a center for integrating and coordinating DoD improvement programs and tools as part of promoting and supporting managers in "managing performance".

2. Re-issue DoDD 5010.31 as the comprehensive policy of applying Defense Performance Management to the DoD as a whole.

3. Adjust all current Productivity Programs, through the (re)issuing of new instructions, to reflect the shift to Defense Performance Management. In particular, it is recommended that the traditional Productivity Enhancing Capital Investment (PECI) program be expanded to include funding for the improvement of all aspects of performance, and not just for equipment and facilities.

4. Another recommendation addresses the need to demonstrate and test the Defense Performance Management model in an actual situation. It is recommended that Defense Productivity Support Office (DPSO) prototype and test the Defense Performance Management model by applying the model to their own specific functional area (i.e. HRM/CPMS) as compliance to the GPRA.

5. The final recommendation addresses the next phase of the DPPI Project. It is recommended that the DPPI project continue to the next phase of the project, which is to develop an "improvement design package" for Work Measurement and Labor Standards (WM/LS). The two major components of the package will be the redesigned WM/LS process and procedures and a general architecture for a new Automated Information System and/or Decisions Support System in support of WM/LS.

1. INTRODUCTION

Section 1 of this "Defense Productivity Process Improvement (DPPI) Project: Baseline Analysis and Improvement Recommendations" report states the purpose of the report, provides brief summaries of the primary background literature consulted, discusses the need for the program review, describes the Defense Productivity Process Improvement Project, and provides an overview of the remainder of the report.

1.1 Purpose

This report documents the results of a review of the Department of Defense (DoD) Productivity Program conducted by the Defense Productivity Support Office (DPSO) in the DoD Civilian Personnel Management Service (DCPMS). The Deputy Assistant Secretary of Defense for Civilian Personnel Policy (DASD(CPP)) in the Office of the Assistant Secretary of Defense for Force Management Policy (OASD(FMP)), in the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD(P&R)), in the Office of the Secretary of Defense (OSD), provided oversight as the DoD Productivity Principal established by DoD Directive 5010.31, "DoD Productivity Program," April 27, 1979 (reference (1)).

The program review represents the first phase of the Defense Productivity Process Improvement (DPPI) Project, a functional process improvement effort conducted by DPSO in accordance with the policies of DoD Directive 8000.1, "Defense Information Management (IM) Program," October 27, 1992 (reference (2)). This program governs the continual evolution and improvement of the essential elements of information management, which include functional process improvement, information resources management, and information technology and services support in the Department. Under this program, the OSD Principal Staff Assistants and the Chairman of the Joint Chiefs of Staff shall, in managing their assigned functional areas and the supporting information systems, simplify and streamline defense operations, evaluate and improve functional processes, promote commonality of functional processes across DoD Components, and perform other functional information management responsibilities listed in the directive.

1.2 Background

The program review included the current DoD Productivity Program directive, four instructions, and three publications which define the baseline productivity process. It also included 19 General Accounting Office (GAO), DoD Inspector General (DoD IG), Defense Audit Service (DAS), Naval Audit Service (NAS), and Air Force Audit Agency (AFAA) reports of findings and recommendations relating to specific aspects of the current process. In addition, it included 51 Office of Management and Budget (OMB), Civil Service Commission (CSC), Office of Personnel Management (OPM), and various other related program reviews providing additional information relevant to documenting the current process. Brief summaries of these documents follow below. Appendix A provides additional details for selected documents.

Current DoD Productivity Program Directive, Instructions, and Publications. As early as the 1960's, the Department has recognized that controlling personnel costs is critical to management of overall defense costs. Several early initiatives--such as methods and standards improvement, value engineering, and zero defects -- had the goal of increasing work force productivity. In 1975, the Department formally established the DoD Productivity Program to emphasize various ways to increase productivity -- such as methods and standards improvement, work force training and motivation, and capital investments -- as well as various techniques and disciplines to increase productivity -- such as value engineering, industrial engineering, management engineering, economic analysis, and program evaluation. Currently, eight DoD issuances comprise the primary official documentation of the baseline productivity process.

- *DoD Directive 5010.31,* "DoD Productivity Program," April 27, 1979 (reference (1)), establishes the productivity program, specifies policy, and outlines responsibilities for program implementation.

- *DoD Instruction 5010.34,* "Productivity Enhancement, Measurement, and Evaluation -- Operating Guidelines and Reporting Instructions," August 4, 1975 (reference (3)), sets forth general operating guidelines and reporting instructions on the enhancement, measurement, and evaluation of productivity in the DoD.

- *DoD Instruction 5010.36,* "Productivity Enhancing Capital Investment (PECI)," August 14, 1991 (reference (4)), provides policy, responsibilities, procedures, and guidance for the PECI process. It also authorizes the publication of a handbook -- DoD 5010.36-H, "Productivity Enhancing Capital Investment (PECI) Handbook."

- *DoD Instruction 5010.37,* "Efficiency Review, Position Management, and Resource Requirements Determination," November 17, 1987 (reference (5)), provides policy, criteria and procedures, guidance, and responsibilities for the DoD efficiency review process, work measurement, labor and staffing standards development, resource requirements determination, and position management throughout the Department. It also sets policy for requirements determination of the programmed force structure, the programmed manpower structure, programmed manning, and position management. It also authorizes the publication of two handbooks--DoD 5010.31-H, "Training Guide for the Management Analyst and Industrial Engineering Technician," and DoD 5010.37-H, "Operational Improvement and Measurement."

- *DoD Instruction 5010.39,* "Work Force Motivation," November 16, 1984 (reference (6)), provides policy, prescribes procedures, and assigns responsibilities for establishment and administration of DoD work force motivation efforts with the objective of enhancing productivity. It also authorizes the publication of a guide-- DoD 5010.31-G, "Guide for the Design and Implementation of Productivity Gain Sharing Programs."

- *DoD Manual 5010.15-1-M,* "Standardization of Work Measurement," June 13, 1977 (reference (7)), provides standard time data and guidelines for uniform application of various industrial and management engineering techniques.

- *DoD Handbook 5010.31-H,* "Training Guide for the Management Analyst and Industrial Engineering Technician," July 1979 (reference (8)), provides guidelines for determining and maintaining the educational requirements for an effective staff of management analysts and industrial engineering technicians.

- *DoD Guide 5010.31-G,* "Guide for the Design and Implementation of Productivity Gain Sharing Programs," March 12, 1985 (reference (9)), provides guidelines for the design and implementation of incentive plans for blue collar activities.

Related Inspections, Audits, and Evaluations. Eighteen reports provide findings and recommendations related to specific aspects of the current process.

- *GAO Report No. FGMSD-78-44,* "Full Potential to Achieve Savings by Investing in Fast Payback Productivity Enhancing Capital Equipment Not Realized," July 25, 1978 (reference (10)), identified certain investment program deficiencies, and recommended corrective actions.

- *GAO Report No. AFMD-81-43,* "Incentive Programs To Improve Productivity Through Capital Investments Can Work," April 20, 1981 (reference (11)), reviewed the DoD Productivity Enhancing Investment Fund and made recommendations to improve this investment program, particularly in the area of ensuring that equipment investments are adequately justified prior to procurement and adequately evaluated after installation.

- *DAS Audit Report No. 82-121,* "Report on the Review of Selected Productivity Enhancing Capital Investment Programs," July 13, 1982 (reference (12)), identified deficiencies in the economic analyses used to justify some investment projects, found deterrents to Military Service participation in this investment program, and recommended corrective actions.

- *NAS Report No. S30202,* "Special Review of Productivity Enhancing Incentive Fund (PEIF) Program Savings," November 17, 1982 (reference (13)), indicated that significant problems continued to exist regarding supporting documentation for cost savings under the Navy PEIF programs, and recommended corrective actions.

- *GAO Letter Report,* "Federal Efforts to Improve Productivity and Reduce Costs Through Productivity Enhancing Capital Investment Programs," October 1, 1985 (reference (14)), announced completion of a federal government-wide planning survey with objectives to identify formalized programs to improve productivity

through capital investment strategies, and to update the GAO knowledge base regarding the DoD Productivity Enhancing Capital Investment Program.

- *DoD IG Study Report,* "Work Measurement Systems and Engineered Labor Standards," October 22, 1986 (reference (15)), addressed the use of such systems and standards in the production phase of the acquisition process. It did not address the use of such systems and standards in other acquisition phases, such as full-scale development, or in other labor categories, such as office work. The study team proposed a DoD-wide policy designed to ensure that the use of work measurement systems will be appropriate, that the work measurement systems will be based on engineered labor standards, and that the benefits will flow not only to the contractor but also to the government.

- *GAO Fact Sheet No. GAO/GGD-87-18FS,* "Productivity: Selected DoD Capital Improvement Projects," December 23, 1986 (reference (16)), discussed the three funding strategies used by the DoD Productivity Enhancing Capital Investment Program and set out overall investments and savings in these programs as well as examples of successful projects.

- *GAO Letter Report,* "Potential for Improving Management and Oversight of the Productivity Investment Fund (PIF)," April 23, 1987 (reference (17)), discussed program weaknesses and recommended corrective actions.

- *AFAA Report No. 7106211,* "Development and Use of Air Force Engineered Maintenance Labor Standards," June 28, 1989 (reference (18)), stated that 63% of the total programmed depot workload did not have engineered labor standards, 54% of work performance observations did not meet the accuracy criteria, 68% of the required reviews of labor standards were not performed, and 82% of the operations had inadequate supporting documentation, and recommended corrective actions.

- *GAO Report No. GAO/NSIAD-89-171,* "Navy Maintenance, Aviation Component Repair Program Needs Greater Management Attention," July 6, 1989 (reference (19)), stated that component repair prices were not adequately supported, audits and reports were not made, and variances between actual and billed labor hours were not analyzed, and recommended corrective actions.

- *GAO Report No. GAO/GGD-90-44,* "Office of Personnel Management -- Better Performance Information Needed," February 1990 (reference (20)), identified 24 key products and services for OPM's operational units, noted that many of these outputs lack the full range of potential performance measures, and recommended corrective actions.

- *GAO Report No. GAO/NSIAD-90-193BR,* "Navy Maintenance, Improvements Needed in the Aircraft Engine Repair Program," June 18, 1990 (reference (21)), stated that significant differences existed in the labor hour estimates developed by different depots to perform the same repair task at the different depots, and recommended corrective actions.

- *DoD IG Audit Report No. 91-039,* "Management of Labor Standards for Airframes at Aeronautical Depots," January 31, 1991 (reference (22)), stated that the Military Departments were not developing and updating labor standards and were not performing variance analyses of differences in actual labor hours expended versus standard labor hours for the maintenance and repair of aircraft airframes, and recommended corrective actions.

- *DoD IG Audit Report No. 92-025,* "Use of Work Measurement System Data in Negotiating with Prime Contractors," December 18, 1991 (reference (23)), found that work measurement data were not used to negotiate direct labor costs of contracts, and recommended corrective actions.

- *NAS Audit Report No. 91-0044,* "Department of the Navy Efficiency Review Program," circa 1992 (reference (24)), recommended that the Department of the Navy terminate its efficiency review program due to lagging schedule delays, quality inconsistencies, and program cost. The Assistant Secretary of the Navy for Manpower and Reserve Affairs did not concur with the NAS proposal to cancel the program, and set forth a plan to improve the program and utilize Total Quality Leadership techniques to ensure achievement of the intended program results.

- *DoD IG Program Evaluation Report,* "The Department of Defense Management Improvement Programs," November 23, 1994 (reference (25)), stated that duplication and overlap of requirements among DoD management improvement programs results in the unnecessary expenditure of resources, that management improvement tools are being prescribed regardless of applicability, and that the DoD lacks an integrating framework for managing improvement programs and tools, and recommended corrective actions.

- *GAO Report No. GAS/OCG-95-1,* "Management Reform -- Implementation of the National Performance Review's Recommendations," December 5, 1994 (reference (26)), reviewed and commented on all 384 major recommendations of the National Performance Review, including 12 DoD-specific recommendations.

- *DoD IG Audit Report No. 95-049,* "Follow-up of the Management of Labor Standards at Aeronautical Depots," December 8, 1994 (reference (27)), stated that the Military Departments' work measurement programs for managing the development and evaluation of labor standards were ineffective and inconsistently applied to competitive and noncompetitive work loads, and that OSD oversight of the Military

Departments' work measurement programs was ineffective. In response to this report, the Under Secretary of Defense for Personnel and Readiness (USD(P&R)) agreed to develop and implement a comprehensive policy on work measurement, complete the standardization of automated industrial engineering techniques, and sufficiently staff the oversight office (reference (28)).

- *DoD IG Program Evaluation Report,* "Department of Defense Management Improvement Programs Work Hour Expenditures," August 1995 (reference (29)), stated the work hours expended by selected DoD organizations during Fiscal Year 1994 in support of five selected management improvement initiatives identified in reference (25).

Other Related Program Reviews. Fifty other related program reviews provide additional information relevant to documenting the current process.

- *University of Iowa Master's Thesis,* "Personal, Rest, and Delay Allowances in the Department of Defense: A Critical Analysis," June 1969 (reference (30)), provided a review by Robert J. Howard of DoD work measurement policies and procedures, including improvement recommendations.

- *U. S. Army Management Engineering College (AMEC) Defense Management Joint Course Workbook,* "Work Methods and Standards Appreciation," circa 1970 (reference (31)), provides a workbook for DoD joint training in work methods and standards.

- *AMEC Defense Management Joint Course Book,* "Work Methods and Standards Orientation," undated (reference (32)), supports AMEC courses providing DoD joint training in work methods and standards.

- *Joint CSC, GAO, and OMB Study of Productivity in the Federal Government.* This study focused on measuring and increasing productivity in the federal government. The joint report included five special reports: (1) "The Permanent Measurement System -- Methods, Measures, and Results;" (2) "Case Studies in Federal Productivity Change, 1967-1972;" (3) "Special Studies of Measurement Problems;" (4) "Analysis of Productivity-Enhancing Capital Investment Opportunities;" and (5) "Proceedings of the Airlie House Conference, March 18-20, 1973, and Related Papers on Organizational and Motivational Factors;" plus a summary report, "Measuring and Enhancing Productivity in the Federal Government," June 1973 (reference (33)).

- *American Institute of Industrial Engineers, Inc. Publication No. AIIE-WM&ME-74-5,* "Rational Approaches to Raising Productivity," circa 1974 (reference (34)), discussed incentives for labor and management to cooperate to improve productivity based on mutual goals and interests.

- *Joint Financial Management Improvement Program Annual Report to the President and The Congress,* Volume I: "Productivity Trends and Current Efforts," Volume II: "Productivity Programs in the Federal Government," and Supplement to Volume I: "The Measurement Data Base," July 1976 (reference (35)), provided productivity data covering the federal government workforce, and recommended improvements.

- *Joint OMB, GAO, Department of the Treasury, and OPM Financial Management Improvement Program Report,* "Implementing a Productivity Program: Points to Consider," March 1977 (reference (36)), discussed critical success factors for productivity improvement.

- *OPM Publication No. WPA-3,* "Measuring Common Administrative Services," April 1980 (reference (37)), presented measures for assessing efficiency (i.e., output divided by input) of operating personnel offices in the federal government.

- *OPM Publication No. WPA-4,* "Productivity Measurement Systems Within the Federal Government," June 1980 (reference (38)), identified the extent to which productivity measurement systems were being used in the federal government and defined the variety of system approaches being employed.

- *OPM Review of Exemplary Practices in Federal Productivity.* The OPM launched this review to identify, validate, and document improvements in federal government productivity. The review evaluated several improvements, in areas such as capital investment, equipment maintenance, financial and accounting processes, and case management. The OPM produced the "Exemplary Practices in Federal Productivity" series of publications, among which was "DoD's Productivity-Enhancing Incentive Funds Program," August 1980 (reference (39)).

- *U. S. Merit Systems Protection Board Director's Monograph,* "The Elusive Bottom Line: Productivity in the Federal Workforce," May 1982 (reference (40)), examined the extent to which the workforce of the federal government was being used efficiently and effectively.

- *Department of the Treasury Working Paper,* "Criteria for Developing Performance Measurement Systems in the Public Sector," May 1982 (reference (41)), presented various approaches and criteria for developing performance measurement systems.

- *Military Standard No. MIL-STD-1567A,* "Work Measurement," March 11, 1983 (reference (42)), provided requirements for the application of work measurement and labor standards by defense contractors.

- *U. S. Department of Labor Bulletin No. 2166,* "Measuring Productivity in State and Local Government," December 1983 (reference (43)), reviewed past research, discussed conceptual issues, examined seven state and local government services, and

offered recommendations for future research on productivity measurement in state and local government.

- *U. S. Department of Labor Manuscript,* "Federal Productivity Concepts and Index Construction," undated (reference (44)), discussed both productivity (i.e., efficiency) and effectiveness measures, and presents criteria for choosing output indicators.

- *U. S. Department of Labor Manuscript,* "Developing Output Indicators for Federal Productivity Measurement," undated (reference (45)), provided specific guidelines for developing proper output indicators for organizations in the federal government.

- *U. S. Naval Postgraduate School Master's Thesis,* "The Introduction of Uncertainty Techniques to the Productivity Investment Fund," March 1984 (reference (46)), reported results of research by Edward A. Lenio which examined whether or not applications of the methods of uncertainty or risk would affect project ranking results obtained by the current DoD procedure for funding productivity investment projects, and recommended the application of multi-attribute utility theory in future research.

- *American Productivity Center Report,* "White Collar Productivity Improvement," circa 1986 (reference (47)), provided results of a two-year action research project which tested a six-phase methodology for improving white collar productivity by focusing on outcomes, not outputs, and on quality and timeliness -- effectiveness, not efficiency.

- *DoD Productivity Enhancing Capital Investment Program Study.* The Defense Productivity Program Office (DPPO) contracted with General Management Systems, Inc. to perform research and analysis relating to this investment program. The contractor report, "Qualification of Productivity Enhancing Investment Potential," June 18, 1986 (reference (48)), identified program problems and recommended corrective actions.

- *DoD Task Force on Productivity in the Support of Operations.* The Assistant Secretary of Defense for Force Management and Personnel (ASD(FM&P)) contracted with the Institute for Defense Analyses (IDA) for a task force of representatives from the DoD Components, other government agencies, and private industry to address the problems faced by DoD in meeting "the demands for increased mission capability in the current environment of constrained manpower resources," and gave the task force a charter to "develop a strategy and a plan for accelerating the application of proven techniques to improve human resource productivity." The IDA Report R-305, "Report of the DoD Task Force on Productivity in the Support of Operations," comprising Volume I -- Summary and Recommendations and Volume II -- Working Group Reports, July 1986 (reference (49)), summarized the task force results.

- *DoD Efficiency Review Program Study.* The DPPO contracted with Management Analysis, Inc. to research the effectiveness of past efficiency reviews, document the improvements realized, develop models or algorithms to project expected future productivity gains from efficiency reviews, and recommend improvements needed in the DoD Efficiency Review Program. The contractor report, "A Study of the Savings and Benefits from the DoD Efficiency Review Program," June 5, 1987 (reference (50)), summarized the study results.

- *U. S. Air Force Human Resources Laboratory Technical Report No. AFHRL-TR-86-64,* "Organizational Productivity Measurement: The Development and Evaluation of an Integrated Approach," July 1987 (reference (51)), described the results of a field evaluation of a new approach to measuring organizational productivity based on the objectives of the organization, measures of how well the organization is meeting these objectives, and functional relationships between performance on the indicators and the contribution that those levels of the indicators make to overall effectiveness.

- *Defense Logistics Systems Analysis Office Study Report,* "Applications of Statistical Process Control," circa 1988 (reference (52)), identified DoD logistics activities which were improving quality by using statistical process control, and recommended a total quality management approach.

- *Military Handbook No. DOD-HDBK-345,* "MID-STD-1567A, Work Measurement Verification and Compliance Plan," June 20, 1988 (reference (53)), provides guidance for reviewing work measurement systems used by defense contractors.

- *OMB Management Review in Productivity Improvement.* The OMB memorandum, "Management Review in Productivity Improvement," April 27, 1988 (reference (54)), resulted in a review of the DoD Productivity Program on July 13, 1988 to ascertain improvements over the previous two years, discuss solutions to problems that may be impeding progress, and renew the commitment to long-term productivity and quality improvement.

- *U. S. Naval Postgraduate School Report No. NPS-54-88-011,* "A Managerial Assessment of the Productivity Investment Fund," September 1988 (reference (55)), identified and evaluated factors which facilitate or impede full participation in the DoD Productivity Enhancing Capital Investment Program.

- *Third Annual DoD Productivity and Quality Conference,* October 3-5, 1988 (reference (56)). The conference focused on the DoD Productivity Improvement Plan, including its genesis, implementation, and future direction. The objectives were to advance the understanding that quality improvement leads to productivity improvement, and underscore line management's responsibility for integrating quality and productivity into the defense planning, programming, and budgeting process.

- *AMEC Defense Management Joint Course Book,* "Defense Work Methods and Standards," comprising Volume I -- Methods Study, Volume II -- Work Measurement, and Volume III -- Workbook, August 1989 (reference (57)), provides DoD joint training in work methods and standards.

- *U. S. Air Force Air University Master's Thesis,* "Comparing Ranking Heuristics for the Productivity Investment Fund Program: A Capital Rationing Problem," December 1989 (reference (58)), reported the results of research by Albert F. Spala which compared two capital rationing heuristics as they apply to the DoD Productivity Investment Fund, and concluded that the DoD heuristic was superior to the alternative.

- *DoD Efficiency Review Program Management Information System Feasibility Study.* The DPPO contracted with Management Analysis, Inc. to determine the feasibility and acceptability of establishing a management information system which would provide the basis for automated generation of annual reports by the DoD Components concerning the efficiency review program. The contractor report, "Department of Defense Efficiency Review Program Management Information System Feasibility Study," December 31, 1989 (reference (59)), summarized the conclusions and recommendations.

- *National Defense University Industrial College of the Armed Forces Research Report,* "A Guide for Improving Productivity in the Military," April 1990 (reference (60)), provided a guide by Lieutenant Colonel Jacob Kessel for supervisors, managers, organization commanders, and executives of all the services to help them improve productivity in the military establishment.

- *George Mason University Manuscript,* "Productivity Capital Investments During Retrenchment," April 19, 1990 (reference (61)), reported the results of research by Paul F. Roberts which examined whether or not the use of productivity-enhancing capital investments will improve productivity of DoD organizations undergoing downsizing.

- *DoD Plan,* "Quality and Productivity Improvement Plan, Fiscal Year 1991," undated (reference (62)), establishes improvement goals, strategies, and initiatives, plus performance measures for DoD Components and selected functions and activities.

- *DoD Task Group on Work Measurement and Application of Standards.* The ASD(FM&P) memorandum, "Task Group on Work Measurement and Application of Standards," April 14, 1991 (reference (63)), launched an initiative to address recommendations made by DoD IG Audit Report 91-039 (reference (22)). The task group presented the background, findings, recommendations (including work measurement policy recommendations), and proposed plan of action in the "Task

Group on Work Measurement and Information Management Report" in early 1992 (reference (64)).

- *U. S. Department of Labor Bulletin No. 2378,* "Productivity Measures for Selected Industries and Government Services," May 1991 (reference (65)), updates through 1989 all indexes included in the industry productivity measurement program for the Bureau of Labor Statistics; it discusses labor productivity trends for selected industries and government functions and multi-factor productivity trends for selected industries.

- *U. S. Air Force Systems Command Handbook,* "The Metrics Handbook," August 1991 (reference (66)), provides detailed guidelines for developing performance measures.

- *DoD Productivity Enhancing Capital Investment Program Status Report to Congress.* The DPPO and the Office of the ASD(FM&P) (OASD(FM&P)) prepared the "Productivity Enhancing Capital Investment Program Status Report," August 1991 (reference (67)), to meet reporting requirements established by Congress. The overall projected benefits from program investments averaged about $17 for each $1 invested.

- *U. S. Department of Labor Publication,* "Description of Output Indicators by Agency for the Federal Government, Fiscal Year 1990," February 1992 (reference (68)), lists agencies, organizations, functions, missions, activities, and output indicators in the Federal Productivity Measurement Program.

- *President's Council on Management Improvement Report,* "Status of Total Quality Management in Departments and Independent Agencies of the Federal Government," May 1992 (reference (69)), summarized general conclusions and recommendations based on a management survey of the implementation of total quality management in the federal government.

- *DoD Implementation of the Chief Financial Officers Act of 1990.* The DoD Comptroller memorandum, "Performance Budgeting," October 29, 1992 (reference (70)), launched an initiative to explicitly include effectiveness performance goals as well as unit cost per output goals in operating budgets. Effectiveness performance goals are objective indicators that describe quality, timeliness, and customer satisfaction characteristics of the output of a given activity. These goals are used to support budget justification and presentation, and they serve as performance measures for the external financial statements required under the Chief Financial Officers Act.

- *OPM Report No. PSO-OSIS-1,* "Investing in Federal Productivity and Quality: A Report to Congress," November 1992 (reference (71)), emphasized that federal productivity and quality can be improved through a variety of actions, including

increasing flexibility and improving methods of holding organizations and individuals accountable for results.

- *Department of the Treasury Guide,* "Performance Measurement Guide," November 1993 (reference (72)), provided a guide designed to help managers plan and implement program performance measurement as required by the Government Performance and Results Act, the Chief Financial Officers' Act, and other initiatives to enhance the operations of the federal government.

- *OPM Interagency Advisory Group Committee on Performance Management and Recognition Handbook,* "Performance Management Program Design Handbook," September 1994 (reference (73)), provides information for designing performance management programs that are tailored to a particular organization.

- *Conference Board Report No. 1118-95-RR,* "New Corporate Performance Measures," circa 1995 (reference (74)), defined key measures of corporate performance, discussed why companies develop new measurement systems, described some frequently used measures, made recommendations for developing key measures, and discussed using key measures to set executive compensation, compete in capital markets, and manage the corporate bottom line.

- *AMEC Handbook,* "Mathematics Review Handbook," March 1995 (reference (75)), provides a review of basic algebra for prospective AMEC students.

- *AMEC Test,* "Mathematics Diagnostic Test," undated (reference (76)), provides a test of fundamental mathematics and simple problem solving for helping AMEC students identify areas for improvement.

- *U. S. Department of Labor Publication,* "Productivity Statistics for Federal Government Functions, Fiscal Years 1967-93," February 1995 (reference (77)), provides indices of output per employee year, output, employee years, and other related data for 24 government functions and the Federal Government as a whole, up through Fiscal Year 1993, in the Federal Productivity Measurement Program.

- *Department of Veterans Affairs Handbook,* "An Integrated Performance Process Framework," April 1995 (reference (78)), presents a framework which integrates major requirements and recommendations of various organizations external to the Department of Veterans Affairs, and facilitates strategic planning and eliminating duplication of efforts within the department.

- *U. S. Government Chief Financial Officers Council Report,* "Implementation of the Government Performance and Results Act (GPRA)," May 1995 (reference (79)), discusses guiding principles for implementing GPRA, key issues requiring additional

attention, baseline information on GPRA implementation, and related networking and information sharing.

- *Naval Air Systems Command (NAVAIR) Study of Naval Aviation Depot (NADEP) Industrial Operations Standards.* The NAVAIR contracted with the Logistics Management Institute (LMI) to review NADEP industrial operations standards. The LMI Report NA505RD1, "Naval Aviation Depot Industrial Operations Standards," July 1995 (reference (80)), reviewed potential efficiency improvements that may result from updating industrial operations standards (including both labor and material standards) and implementing the Depot Maintenance Standard System in NADEPs. This report addressed recommendations made by DoD IG Audit Report 95-049 (reference (27)), and developed specific conclusions and recommendations regarding industrial operations standards (including both labor and material standards).

- *DoD Implementation of the Government Performance and Results Act of 1993.* Principal Deputy Under Secretary of Defense (Comptroller) memorandum, "Department of Defense (DoD) Corporate Level Performance Goals and Measures Under the Government Performance and Results Act (GPRA)," April 24, 1995 (reference (81)), expanded an existing DoD/Joint Chiefs of Staff GPRA Working Group to include representation from the Military Departments and Defense Agencies. The OUSD(C) summarized the working group results in the "Government Performance and Results Act Report," October 1995 (reference (82)). This report included a statement of the DoD Mission, Vision, and Corporate Goals.

1.3 A Need to Review the DoD Productivity Program

As noted above, the DoD Productivity Program was established formally in 1975. Since that time, program changes have not kept pace with major changes in the defense environment, culture, technology, and management. As a result, the program now suffers from policy deficiencies and infrastructure inadequacies. This comprehensive review is a necessary first step toward modernizing the program to make it work better and cost less.

Environmental Trends

- *National Security Challenges: Foreign, Domestic & Economic Changes.* As a result of recent and emerging changes in international security, domestic, and economic environments, America is undergoing major adjustments on both international and national levels. These adjustments affect the DoD mission and infrastructure, as was noted in the "Annual Report of the Secretary of Defense to the President and the Congress," February 1995 (reference (83)). In turn, these changes may affect DoD Productivity Program policy and infrastructure needs.

- *Downsizing, Reinventing & Streamlining Government & Defense.* While the national security challenges may not change the basic missions of the federal government and the DoD, they may offer opportunities to downsize, reinvent, or streamline their missions, functions, programs, and processes, as was noted in the "DoD Plan for Streamlining the Bureaucracy," December, 1993 (reference (84)). In turn, these opportunities may affect DoD Productivity Program policy and infrastructure needs.

Cultural Trends

- *National Performance Review & Defense Performance Review.* President Clinton's remarks on March 3, 1993 announcing the National Performance Review (NPR) (reference (85)) included the following statement: "Our goal is to make the entire federal government both less expensive and more efficient, and to change the culture of our national bureaucracy from complacency and entitlement toward initiative and empowerment. We intend to redesign, to reinvent, to reinvigorate the entire national government." The DoD undertook the Defense Performance Review (DPR) in support of the NPR to identify successful innovations and management improvements for the Department. The DPR builds on previous DoD successes and the principles of quality leadership, management, and culture to devise innovative ways to encourage more business-like practices and market-driven efficiencies in the Department. In turn, these cultural changes may affect DoD Productivity Program policy and infrastructure needs.

- *Labor-Management Partnerships in Government & Defense.* Executive Order 12871, "Labor-Management Partnerships," October 1, 1993 (reference (86)), established labor-management partnerships as a goal of the Executive Branch. This order recognizes that the involvement of federal employees and their union representatives is essential to achieving NPR objectives, and that the nature of federal labor-management relations must be changed so that managers, employees, and unions act together as partners in designing and implementing comprehensive changes necessary to reform the federal government. The Defense Labor-Management Partnership Agreement, June 9, 1994 (reference (87)), incorporated these cultural changes into the way that the DoD operates. In turn, these cultural changes may also affect DoD Productivity Program policy and infrastructure needs.

- *Quality Management in Government & Defense.* The NPR (reference (85)) and the DPR require that quality management (QM) principles be incorporated into every facet of the missions of the federal government and the DoD. The DoD QM initiative applies the power of individual contributions, teamwork, quantitative methods, and systems theory to achieve organizational goals. It relies on executive leadership to create a quality culture and work environment that will encourage active participation of all members of the organization and its customers and suppliers in identifying and implementing opportunities for innovation and continuous improvement. In turn,

these cultural changes may affect DoD Productivity Program policy and infrastructure needs as well.

Technological Trends

- *Information Resources Management in Government & Defense.* Modern information technology has revolutionized work in the federal government and the DoD, as was noted in the Supplement to the President's Fiscal Year 1995 Budget, "High Performance Computing and Communications: Technology for the National Information Infrastructure," undated (reference (88)). For example, today's desk-top computers exceed the capabilities of mainframe computers in the 1970's, and today's integrated voice, video, and data capabilities were "science fiction" in the 1970's. As a result, the DoD Productivity Program policy and infrastructure may address these new capabilities and associated new problems, such as information overload.

- *The "Information Technology Superhighway" of the Future.* Modern information technology has also revolutionized communications, as was noted in reference (88). Today's networking capabilities allow individuals and organizations around the world to communicate in near real-time with the click of a "mouse." The practical applications of this new technology seem limitless. As a result, the DoD Productivity Program policy and infrastructure may also address these new capabilities and associated new problems, such as information control.

Management Trends

- *Emphasis on Productivity.* During the 1970's to mid-1980's, management emphasis was on improving productivity (i.e., efficiency), especially labor productivity. The DoD Productivity Program currently reflects this emphasis.

- *Emphasis on Quality.* During the late 1980's to mid-1990's, management emphasis shifted to improving quality (i.e., effectiveness) of products and services to meet customer needs. The DoD QM initiative and the DoD implementation of the Chief Financial Officers Act currently reflect this emphasis.

- *Emphasis on Methods and Procedures.* During both productivity and quality eras, management emphasis was also on improving work methods and procedures (i.e., work process) as the primary means for improving both productivity and quality. The DoD Productivity Program, the DoD QM initiative, and the Defense IM Program currently reflect this emphasis.

- *Emphasis on Total Performance.* During the late 1990's, management emphasis will be on improving overall defense performance (i.e., effectiveness, efficiency, and work process). The current DoD initiative to implement the Government Performance and

Results Act reflects this more comprehensive emphasis. In turn, this new emphasis may affect the DoD Productivity Program policy and infrastructure needs.

Program Trends

- *Policy Deficiencies.* The DoD Productivity Program directive, instructions, and publications have not been updated to reflect environmental, cultural, technological, and management trends described above. Recent program reviews identified specific policy deficiencies, particularly in the area of work measurement and labor standards. Thus, DoD Productivity Program policy may be modernized, as appropriate.

- *Infrastructure Inadequacies.* The DoD Productivity Program infrastructure has been downsized along with the rest of the DoD. Recent program reviews also identified specific infrastructure inadequacies, particularly in the area of work measurement and labor standards. Thus, DoD Productivity Program infrastructure may also be modernized, as appropriate.

1.4 Scope of the Defense Productivity Process Improvement Project

The Defense Productivity Process Improvement (DPPI) Project seeks to reinvent, streamline, and improve the DoD Productivity Program to make it work better and cost less. The project reviews this program in the broad context of all current and canceled management improvement initiatives reviewed in the DoD IG Program Evaluation Report (reference (25)). This report found that duplication and overlap of requirements among DoD management improvement programs results in the unnecessary expenditure of resources, that management improvement tools are being prescribed regardless of applicability, and that the Department lacks an integrating framework for managing improvement programs and tools. Brief descriptions of the project goal, objectives, approach, methodology, working group, steering group, and coordination follow.

Goal and Objectives. The DPPI Project supports the DoD Mission, Vision, and Corporate Goal 7, "Employ modern management tools, total quality principles, and best business practices to reduce costs and eliminate unnecessary expenditures, while maintaining required military capability across all DoD mission areas," as described in the OUSD(C) "Government Performance and Results Act Report" (reference (82)). The project will reinvent, streamline, and improve the defense productivity process to make it work better and cost less. It will update the process to incorporate executive and legislative branch requirements for reinventing and streamlining government as well as changes in DoD management philosophy and policy. It will address recommendations concerning the integration of DoD management improvement processes made by the DoD IG. It will also address recommendations concerning DoD work measurement and labor standards processes made by the GAO, DoD IG, AFAA, and DoD functional managers, as directed by the USD(P&R) (reference (28)). In summary, it will modernize the defense productivity process and lead to migration of the multiple legacy management improvement programs, processes, data, information systems, and automated tools

currently in use toward a common set of standard management programs, processes, data, information systems, and automated tools, and will thereby minimize duplication, reduce costs, and eliminate unnecessary expenditures.

Approach and Methodology. The DPPI Project is being conducted in accordance with the policies of the Defense IM Program (reference (2)), which prescribes a specific functional process improvement methodology using the IDEF0 process modeling technique. The first phase of the DPPI Project uses this methodology to review and document the current baseline ("As-Is") productivity process and then develop the case for change, the proposed alternative (i.e., "To-Be") process, the proposed management initiative, the specific policy recommendations, and the proposed action plan for implementing the alternative process, management initiative, and policy recommendations. The DPSO will execute the proposed action plan concurrently with the subsequent project phases, which will continue this functional process improvement effort by focusing on the specific DoD processes for implementing the policy recommendations and standardizing the related systems and tools.

Working Group, Steering Group, and Coordination. For this first phase of the DPPI Project, the project working group consisted of the DPSO staff, Defense Information Systems Agency Contracting Officer's Technical Representative, MICAH Systems, Inc. delivery order leader, and Lockheed Martin Technical Services, Inc. support staff. The steering group consisted of the DASD(CPP), who provided comments during in-process reviews at the mid-point and end-point of this phase. However, the results in this report reflect the findings and recommendations of the project working group. The DASD(CPP), ASD(FMP), USD(P&R), and DoD Components may not necessarily endorse the findings and recommendations in this report. Thus, the proposed action plan includes a provision for the additional coordination necessary to implement these recommendations.

1.5 Summary

This report, "Baseline Analysis and Improvement Recommendations," documents the current baseline concept and processes of the DoD Productivity Program (Section 2), summarizes the major problems, deficiencies, and other opportunities for improvement identified during the program review (Section 3), presents the alternative unified concept and processes developed to ameliorate the major problems, deficiencies, and other opportunities for improvement (Section 4), describes a proposed initiative to implement an alternative unified concept and processes for defense performance management (Section 5), and discusses specific recommendations and next steps (Section 6). Attached are lists of references and acronyms. Additional details for Sections 1, 2, 4, and 5, as well as lists of references and acronyms, are included as Appendices.

2. DEFENSE PRODUCTIVITY MANAGEMENT: CURRENT CONCEPT

Section 2 of this "Department of Defense Productivity Program Review Report" describes the methodology used to analyze the current baseline ("As-Is") productivity concept and process, documents the results of the IDEF0 process modeling efforts to summarize the baseline productivity concept and processes, and discusses implications of this program model for making the case for change.

2.1 Methodology

To analyze the baseline productivity process for the Department of Defense (DoD) Productivity Program (reference (1)), the project working group performed a content analysis of the primary background literature for the program (see Section 1), and documented the results using the IDEF0 process modeling technique required by the Defense Information Management (IM) Program (reference (2)). The resulting model includes a Context Diagram and the associated definitions of the capstone baseline productivity process and its major inputs, controls, outputs, and mechanisms (ICOMs), plus a Node Tree which describes the decomposition of the capstone process into its component subprocesses. It also includes a First-Order Decomposition Diagram and the associated definitions of the major first-level component subprocesses in the Node Tree and their major ICOMs, and a Second-Order Decomposition Diagram and the associated definitions of the major second-level component subprocesses in the Node Tree and their major ICOMs.

An overview of these models is presented below, followed by the basic diagrams. Figure 1 is the Node Tree Diagram showing level one and two sub-processes. Figure 2 is the Context Diagram showing ICOMs for the overall defense productivity process. Figure 3 is the First-Order Decomposition Diagram showing ICOMs for major subprocesses of the overall defense productivity process. Appendix A contains the complete model documentation, including the Context Diagram, the Node Tree, the First- and Second-Order Decomposition Diagrams, and the definitions of activities and arrows. The next sub-section describes the current operating concept of the DoD Productivity Program and the overall defense productivity process. The subsequent sub-sections discuss each major subprocess.

2.2 Operate DoD Productivity Program (A0)

In 1975, the Department formally established the DoD Productivity Program to emphasize various ways to increase productivity, particularly labor productivity. DoD Directive 5010.31 (reference (1)) documents the current program and requires the designation of a DoD Productivity Principal who will be responsible for operating the program. Currently, the Deputy Assistant Secretary of Defense for Civilian Personnel Policy (DASD(CPP)) is the DoD Productivity Principal, and the Assistant Secretary of

Defense for Force Management Policy (ASD(FMP)) is responsible for program management on behalf of the Under Secretary of Defense for Personnel and Readiness (USD(P&R)).

Applicability and Scope. The DoD Productivity Program applies to all DoD Components. Its scope includes support functions in all organizations and units--except government-owned, contractor-operated facilities--in the force structure. Specific exemptions to full implementation of its provisions may be granted in response to a waiver request (reference (1)).

Definitions. The basic program definitions provide interpretations of productivity-related concepts. For maximum clarity, these definitions are quoted verbatim, and in their entirety, below (reference (1)):

1. *Productivity.* "The ratio of goods produced or services rendered (output) to resources expended (input)."

2. *Productivity Enhancement.* "Increasing the ratio of goods produced or services rendered (outputs) to resources expended (inputs). (Synonym: Productivity Improvement)."

3. *Productivity Evaluation.* "An assessment of productivity changes in relation to established goals, objectives and resources expended."

4. *Productivity Measurement.* "The determination and comparison of the change of output-input relationships for two or more periods of time."

    a. *Total Factor Productivity.* "Productivity measurement considering all resources used to produce a defined output."

    b. *Labor Productivity.* "A factor of productivity measurement based on a quantification of the labor input; i.e., workyears, workdays, workhours, workpower costs, etc. This measure will be the primary basis for assessment in the DoD Productivity Program."

    c. *Capital Equipment Productivity.* "A factor of productivity measurement based on the value of capital equipment investment to defined output(s)."

    d. *Real Property Productivity.* "A factor of productivity measurement based on the real property used to produce a defined output. Real property may be expressed as the dollar value of real property or in some other expression of property characteristics."

5. *Measurable Area.* "A function or homogenous work activity or group that can be described by a specific output and for which a relationship between input and output

may be developed that will reflect the results of changes in efficiency, quality or scope of work."

6. *Workload Measurement.* "The identification and quantification of the amount of work imposed upon, or assumed by, a person or organization at a fixed point in time."

7. *Factor Price.* "The monetary value of individual productivity factors (e.g., labor, capital equipment, real property or materials) expressed as an aggregate of all costs incurred for the particular factor."

8. *Resource Utilization.* "The application of resources (personnel, money, materials, and services) to perform missions, functions, and responsibilities."

9. *Fixed Site Unit.* "Units that are organized, equipped and designated to operate from a fixed-site, whether they are located in the United States or overseas. Also includes units which are mobile, but not designated to deploy (e.g., flying training squadrons)."

10. *Deployable Unit.* "Units that are organized, equipped, and designated to either operate in a mobile mode or to deploy into the theater prior to operating in either a mobile or stationary mode."

Policies. For maximum clarity, the basic program policies are quoted verbatim, and in their entirety, below (reference (1)):

1. "The DoD Productivity Program will focus management attention on achieving maximum Defense outputs within available resource levels by systematically seeking out and exploiting opportunities for improved methods of operation, in consonance with the Defense Preparedness mission."

2. "Productivity measurement, enhancement, and evaluation will be an integral element of resource management; that is, planning, programming, budgeting, accounting and reporting systems."

3. "The DoD Productivity Program is a labor oriented program. Therefore, the primary basis for productivity assessment will be labor productivity measurement. Labor productivity measurement is a subset of total factor productivity or unit cost measurement. Where adequate cost information is available, total factor or unit cost measures may be used in addition to labor based productivity measures."

4. "Productivity enhancement will focus on labor cost savings as well as reduction in unit cost of operations. The savings should be re-utilized at the lowest organizational level practical to provide an incentive for management."

5. "Labor resource decisions in the programming and budgeting processes will be based on productivity statistics where available. Where specific functional statistics are not available, broad Service level statistics should be considered."

6. "The DoD Productivity Program will include:

    a. "Establishment of productivity goals as an integral part of Defense planning, programming, and budgeting, and allocation of adequate resources to reasonably assure goal attainment."

    b. "A planned approach to productivity enhancement which will encompass:

        (1) "Continuing analysis, performance appraisal, and improvement of all operating methods and systems."

        (2) "Effective use of work measurement and statistical techniques to determine workforce efficiency; to develop a data base for use in operating and resource management systems consistent with DoD Directive 5000.19 ["Policies for the Management and Control of Information Requirements," March 12, 1976 (currently, DoD Directive 8910.1, "Management and Control of Information Requirements," June 11, 1993 (reference (89)))] and to provide a basis for planning and programming resource requirements."

        (3) "A comprehensive program to identify improvement alternatives for and provide timely funding of productivity enhancing capital investments as part of overall capital investment planning and financing."

        (4) "Analysis and evaluation of productivity improvement alternatives in accordance with DoD Instruction 7041.3 ["Economic Analysis and Program Evaluation for Resource Management," October 18, 1972 (reference (90))]."

        (5) "An aggressive and cohesive program of research and management efforts to improve workforce motivation and the quality of working life."

Responsibilities. For maximum clarity, the basic assignments of program responsibilities are quoted verbatim, and in their entirety, below (reference (1)):

1. "The Under Secretaries and the Assistant Secretaries of Defense, the Secretaries of the Military Departments, the Chairman of the Joint Chiefs of Staff, the Directors of

Defense Agencies, and the Director, Washington Headquarters Services, are responsible for:

a. "Ensuring that the polices set forth in this Directive are effectively implemented in their respective areas of responsibility."

b. "Ensuring that productivity measurement, enhancement, evaluation, and reporting are incorporated as an integral element of all resource management planning, programming and budgeting systems under their cognizance in accordance with OMB Circulars A-11 and A-44 [A-11, "Preparation and Submission of Budget Estimates," June 6, 1995 (reference (91)); and A-44, "Establishment of a Management Improvement Program," May 24, 1972 (rescinded)]."

2. "In addition to the responsibilities outlined above, the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) [currently, the ASD(FMP)] is assigned overall responsibility for the DoD Productivity Program. In carrying out this responsibility, the ASD(MRA&L) [now, the ASD(FMP)] shall:

a. "Provide program policy guidance."

b. "Issue appropriate DoD instructions and guidance."

c. "Designate a DoD Productivity Principal [currently, the DASD(CPP)] who will be responsible for:

(1) "Providing overall program technical guidance."

(2) "Monitoring and coordinating internal DoD productivity efforts."

(3) "Analyzing productivity data, compiling DoD productivity reports, and providing data as required for other elements of the Federal Government."

(4) "Providing curriculum guidance on all training related to the productivity program."

(5) "Representing the Department of Defense on productivity in dealings with other Federal Agencies under the responsibilities assigned in OMB memoranda and Executive Order 12089 [QMB Memoranda, "Productivity Management Program, July 9, 1973, and "Productivity Management Program," July 13, 1976; and EO 12089, "National Productivity Council," October 23, 1978 (43 F.R. 49773 (1978)) (revoked)]."

3. "In addition to the responsibilities outlined...above, the Assistant Secretary of Defense (Comptroller) [currently, the Under Secretary of Defense (Comptroller) (USD(C))] shall ensure that productivity efforts are integrated in DoD resource management systems as prescribed in DoD Directive 7000.1 ["Resource Management Systems of the Department of Defense," August 22, 1966 (currently, DoD Directive 7045.14, "Planning, Programming, and Budgeting System (PPBS)," May 22, 1984 (reference (92)))] by:

    a. "Issuing policy guidance on the identification and use of productivity data, including capital investment plans, in development and support of annual budget estimates and the Five Year Defense Program (FYDP)."

    b. "Ensuring that the DoD management information and accounting systems contain provisions for accumulating productivity data."

    c. "Maintaining economic analysis policy guidance in accordance with DoD Instruction 7041.3 ["Economic Analysis and Program Evaluation for Resource Management," October 18, 1972 (reference (90))]."

4. "In carrying out the responsibilities outlined...above, the Secretaries of the Military Departments, the Directors of Defense Agencies, and the Director, Washington Headquarters Services, shall:

    a. "Ensure that a Department/Agency Productivity Program is established and sustained in accordance with the policies and guidelines in this Directive."

    b. "Designate a productivity principal who will be responsible for planning and coordinating a cohesive productivity program as outlined...[above] and representing the Department/Agency on all productivity matters."

    c. "Provide adequate resources including a trained staff of personnel to sustain a viable DoD Productivity Program."

5. "In addition to the responsibilities outlined...above, the Secretary of the Army shall provide and finance DoD training in support of the DoD Productivity Program in accordance with the provisions of DoD Directive 5010.16 ["Defense Management Education and Training Program," July 28, 1972 (reference (93))]."

6. "In addition to the responsibilities outlined...above, the Director, Defense Logistics Agency, shall provide staffing and administrative support to the DoD Productivity Program Office [currently, the Defense Productivity Support Office, within the DoD Civilian Personnel Management Service]."

Inputs, Controls, Outputs, and Mechanisms (ICOMs). Figure 2 depicts the major ICOMs identified in the primary background literature describing the overall defense productivity process. Figure 3 depicts these ICOMs as they relate to the four program subprocesses identified. Since these ICOMs are largely self-explanatory, they will not be described in this section. Consult Appendix A for detailed definitions of the process activities and arrows. Brief discussions of the program subprocesses follow below.

2.3 Manage Productivity Program (A1)

On behalf of the ASD(FMP) and the USD(P&R), the DASD(CPP), as the DoD Productivity Principal, performs this activity of planning, guiding, and supporting the overall effort of improving defense productivity. Planning includes establishing the program mission, vision, guiding principles, values, strategies, goals, and objectives, as well as specific program plans. Guiding includes developing the program policy directives, instructions, and publications, as well as issuing specific program guidance. Supporting includes performing program liaison, conducting research and studies, and providing curriculum guidance for productivity training necessary for the overall effort of improving defense productivity.

2.4 Implement Enhancement Programs (A2)

This is the activity of establishing specific programs which implement particular strategies for improving defense productivity. At the Office of the Secretary of Defense (OSD) and other DoD Component headquarters levels, this activity involves mainly planning, developing, and issuing policy directives, instructions, publications, and other guidance on specific programs for improving defense productivity, and then overseeing implementation to ensure success. Currently, several such DoD programs exist: (a) productivity, enhancement, measurement, and evaluation (reference (3)); (b) productivity-enhancing capital investment (reference (4)); (c) efficiency review, position management, and resource requirements determination (reference (5)); and (d) work force motivation (reference (6)). At lower organizational levels within the DoD Components, this activity involves mainly establishing and operating specific productivity improvement initiatives.

2.5 Oversee Productivity Program Implementation (A3)

This is the activity of monitoring, analyzing, and evaluating the feedback on performance of the overall DoD Productivity Program, the specific productivity improvement programs and initiatives, and the overall defense productivity improvement effort. Based on such evaluations, changes are implemented to improve performance. Such changes may also result from coordination of the DoD Productivity Program with related defense performance improvement efforts to increase effectiveness and reduce unnecessary overlap and redundancy. At the OSD and other DoD Component headquarters levels, this activity affects mainly planning, developing, and issuing policy directives, instruction, publications, and other guidance on specific programs for improving defense productivity. At lower organizational levels within the DoD Components, this activity involves mainly managing specific productivity improvement initiatives.

2.6 Integrate Productivity Data Into Resource Management Systems (A4)

This is the activity of ensuring that productivity efforts are integrated into DoD resource management systems. At the OSD level, the USD(C) performs this activity in accordance with DoD Directive 7045.14, "Planning, Programming, and Budgeting System (PPBS)," May 22, 1984 (reference (92)). This activity involves mainly: (a) issuing policy guidance on the identification and use of productivity data, including capital investment plans, in development and support of annual budget estimates and the FYDP; (b) ensuring that the DoD management information and accounting systems contain provisions for accumulating productivity data; and (c) maintaining economic analysis policy guidance in accordance with DoD Instruction 7041.3 (reference (90)). At other DoD Component headquarters levels, and at lower organizational levels within the DoD Components, this activity involves mainly implementing and supplementing the USD(C) policy guidance.

2.7 Discussion

In summary, the DoD Productivity Program focuses on increasing efficiency by improving methods of operation. It requires productivity goal setting, measurement, enhancement, and evaluation to be integrated into resource management systems, that is, planning, programming, budgeting, accounting, and reporting systems. Although it emphasizes labor productivity, it includes all other aspects of productivity, such as total factor productivity and unit cost measurement. It recognizes a need for management incentives to improve productivity. It also requires a planned approach to productivity enhancement. This approach includes continuously improving all operating methods and systems, using work measurement and statistical techniques, funding productivity-enhancing capital investments, performing economic analysis of the productivity improvement alternatives, and conducting research and management efforts to improve workforce motivation and the quality of working life. Finally, it assigns responsibilities for program implementation.

Although the current baseline ("As-Is") productivity process model appears to be sound, the program now suffers from certain policy deficiencies and infrastructure inadequacies (see Section 1). For example, specific program requirements may duplicate or overlap those of other management improvement initiatives, which may result in the unnecessary expenditure of resources (reference (25)). Also, the work measurement infrastructure for managing the development and evaluation of labor standards may be ineffective (reference (27)). The next section (Section 3) summarizes the major problems, deficiencies, and other opportunities for improvement identified in the program review, and makes the case for changing the program model to address them.

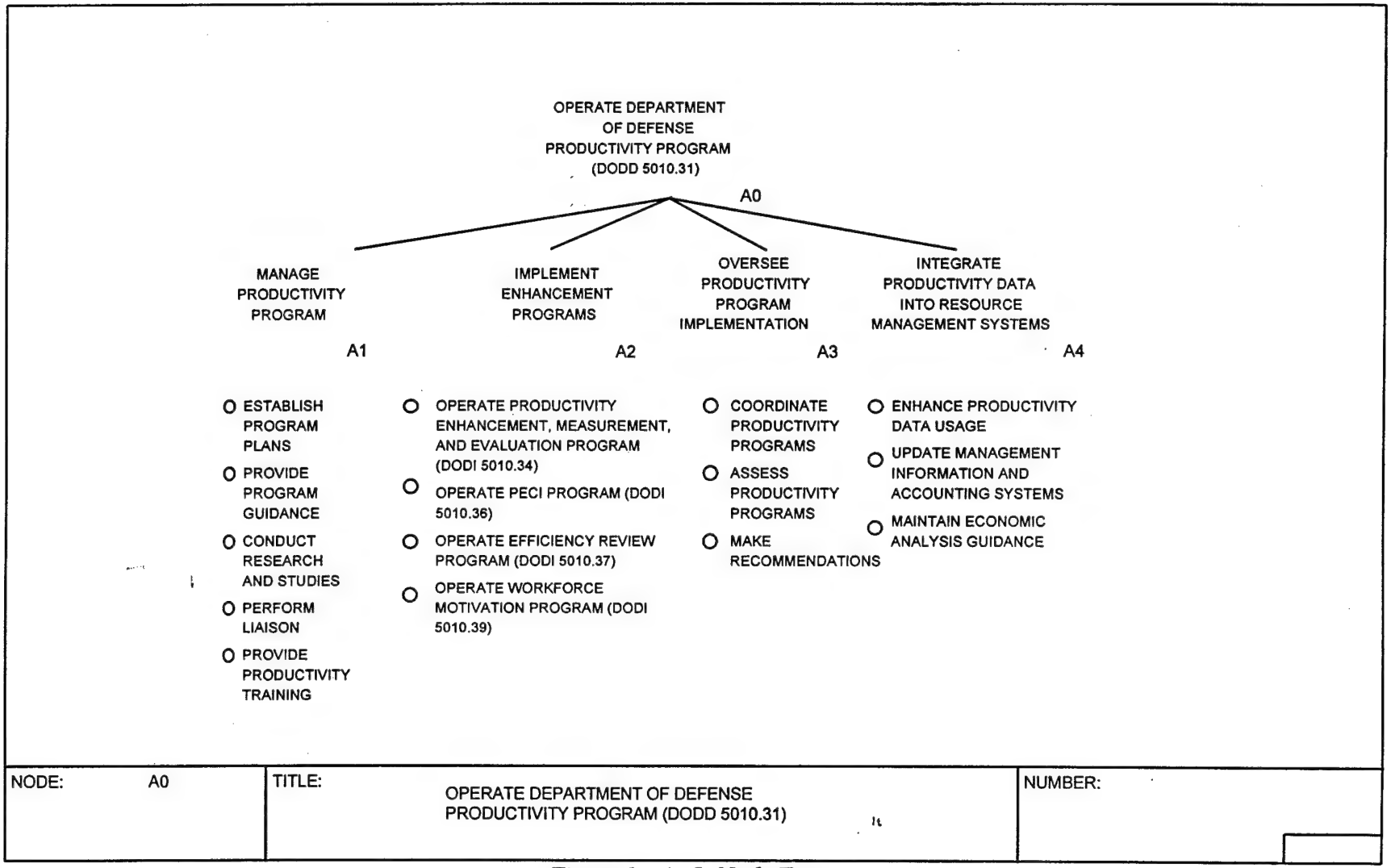

Figure 1: As-Is Node Tree

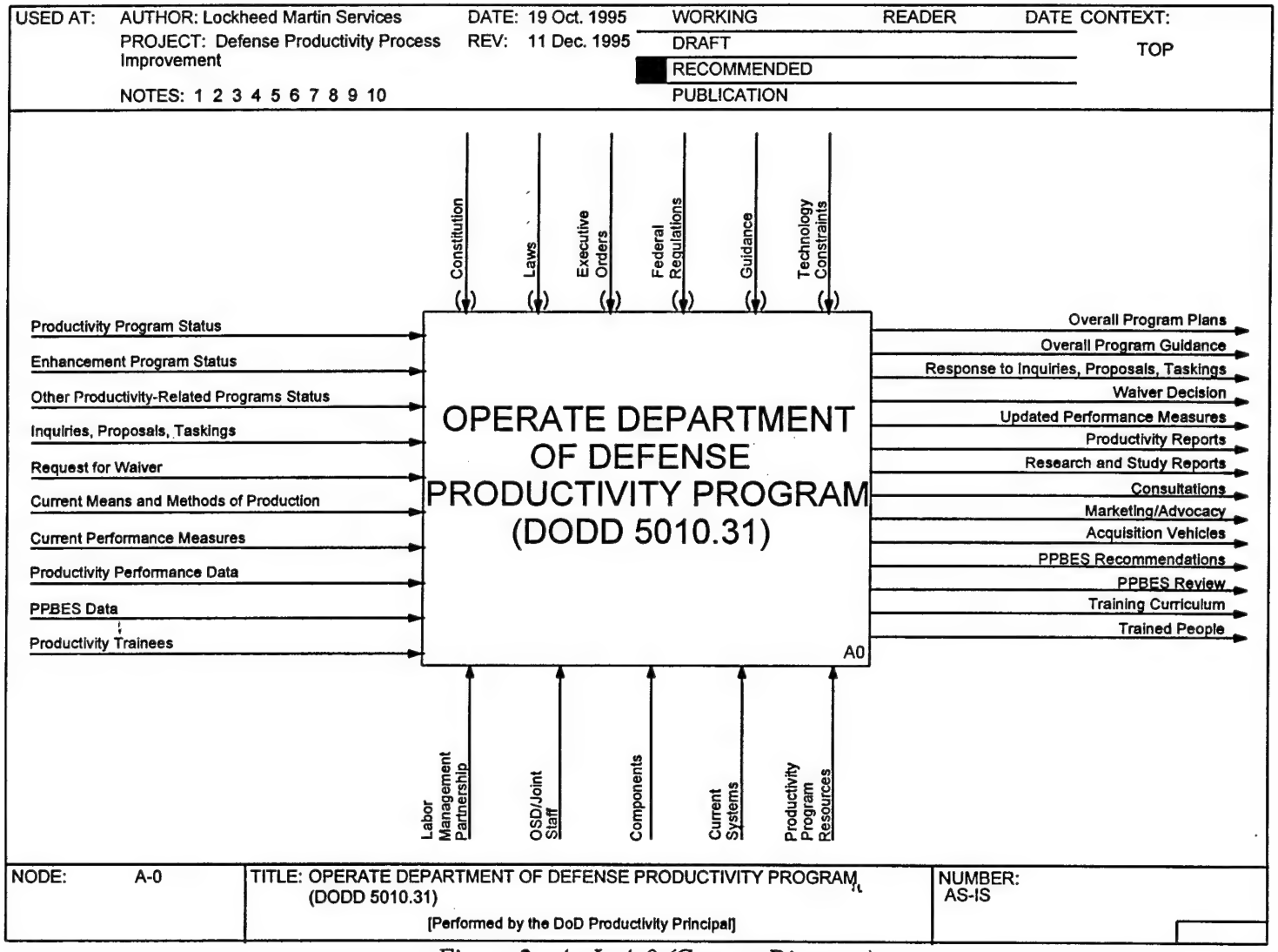

Figure 2: As-Is A-0 (Context Diagram)

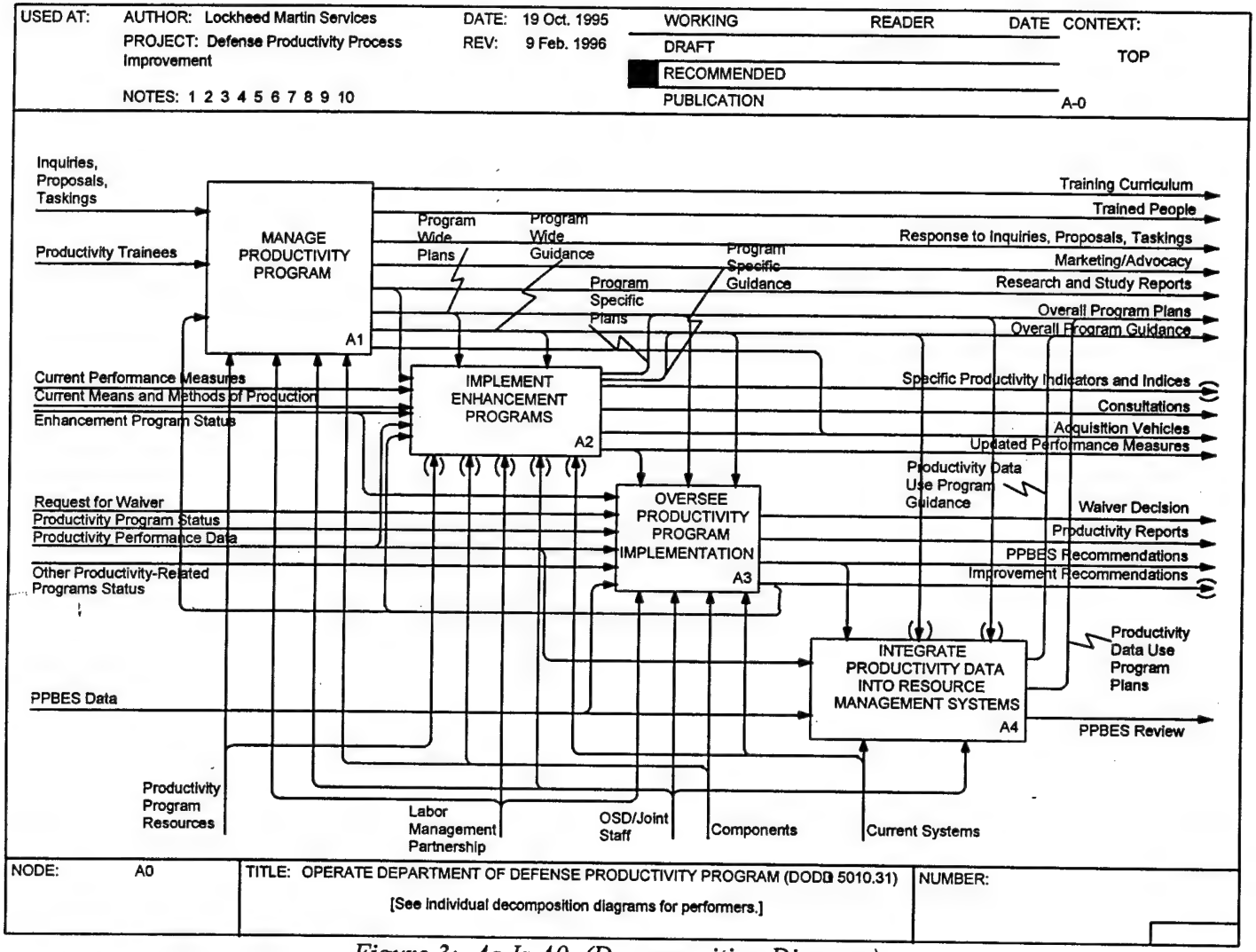

Figure 3: As-Is A0 (Decomposition Diagram)

3. THE CASE FOR CHANGE

Section 3 of this "DDPI Project: Baseline Analysis and Improvement Recommendations" report describes the methodology used to analyze the need for changing the current baseline ("As-Is") productivity concept and process, summarizes the problems, deficiencies, or opportunities for improvement identified in the program review, and discusses the need for migration of the legacy management improvement programs, processes, data, information systems, and automated tools toward a common, standard approach to improving defense performance.

3.1 Methodology

The review of the background material and the modeling of the current Department of Defense (DoD) Productivity Program processes (Sections 1 & 2) revealed many problems and deficiencies. In functional process improvement terminology, these are opportunities to make improvements in the business area under consideration. These opportunities make the case for changing the current business processes--either incrementally, or by a major redesign--along with realizing projected benefits.

The numerous problems have been grouped and summarized into a few major areas which are described briefly below. Appendix B provides more detailed descriptions, with examples, plus discussions of what would be involved in resolving the problems, as well as the expected benefits from their resolution. In addition, Appendix B includes unrefined lists of problems and recommendations from the Work Measurement and Labor Standards (WM/LS)-specific studies and reports. These lists form the basis for WM/LS-specific problem areas, as well as examples of the other problem areas.

Some of these opportunities for improvement apply generally to the DoD Productivity Program as a whole. Others relate directly to productivity measurement, evaluation, and reporting. Still others are WM/LS-specific. The case for change is presented below in these three groupings, and in this order. In reality, these opportunities often relate to several processes of the DoD Productivity Program. (Figure 10 in Appendix B provides a cross-reference of the opportunities to these processes.) Furthermore, the opportunities have been identified in various reviews and reports. (Figure 11 in Appendix B provides a cross-reference of the opportunities to related sources.)

3.2 DoD Productivity Program

The problems or deficiencies which apply generally to the DoD Productivity Program as a whole and to all of its particular programs are several, as discussed below.

Reduced Federal Government Impetus for the DoD Productivity Program. The current trend in the federal government is away from traditional management emphases on improving work methods and standards (work process), productivity (efficiency), or quality (effectiveness) toward a new management emphasis on improving total performance (effectiveness, efficiency, and work process) which is a comprehensive,

holistic approach. This reflects the new approaches in resource and financial management and in quality and process orientation to improving business. The trend toward performance management is also supported by the Government Performance and Results Act (GPRA) and the National Performance Review (NPR) requirements. In addition, the the limited use and high cost of work measurement, labor standards, and other operations standards reduces their viability. As a result, there is little interest in, or support for, productivity programs--except in the context of GPRA and NPR implementation.

Duplication and Overlap Among Performance Improvement Efforts. There appears to be substantial duplication and overlap among the various programs, initiatives, and tools which are designed to improve the performance of the DoD as a whole, as well as its individual DoD Components. These programs include the DoD Productivity Program, DoD Quality Management (QM) initiative, and DoD implementation of GPRA, among many others. Although the basic core requirements and elements of these performance improvement programs are essentially the same, there is no compelling or comprehensive framework for integrating the various performance improvement programs, initiatives, and tools into a coherent whole. In addition, these programs, initiatives, and tools appear to be applied indiscriminately, without regard to their applicability; and the performance improvement efforts are not coordinated to build upon, and inter-act with, one another. As a result, managers may become overwhelmed, confused, "turned off", or otherwise disinclined to realize real performance improvement, and scarce resources may be misused.

Unclear, Inconsistent, or Outdated Policy and Guidance. The current work process, productivity, quality, and performance policy and guidance include directives, instructions, and publications which are outdated, which overlap or duplicate one another, which appear to conflict with one another, and which are often vague. As a result, policy may not be helpful and guidance may not provide clear direction.

Reactive Vice Proactive Policy Oversight. Although there are many requirements for planning, for establishing goals, objectives and performance measures, for the application and use of performance measures, and for reporting and verification of performance results, there is little evidence of requirements, mechanisms, or structures for oversight to ensure that there is compliance. In this context, "oversight" is meant to include the full spectrum of management initiative and follow-through -- from establishing requirements to providing guidance, to monitoring compliance, to validating performance measures and expectations, to determining variance of performance results verses expectations, to assessment and evaluation of performance results, to enforcing requirements for reporting, to providing feedback and on-going guidance, and to final recognition and use of performance results -- whether positive or negative. There is little accountability for actually complying with the policy, guidance, and other requirements designed to improve performance. Periodic inspections, audits, evaluations, and yearly reporting are too gross and too late for effective management of performance improvement. If it is true that "one cannot manage what one cannot measure," it may also be true that "one will not

measure what is not managed or overseen." In other words, if the performance measurement is not managed, overseen, and used in a rather immediate time frame, then no one will measure or report seriously.

Downsized Program Support Infrastructure. The infrastructure of assigned responsibility, staffing, reporting requirements, funding, and training necessary to establish and operate the DoD Productivity Program barely exists now as a result of the DoD-wide downsizing.

Disincentives Vice Incentives for Productivity Improvement. Managers appear to have little real incentive to improve performance. As for negative incentives, those business units which try to improve will probably have their budgets reduced, often before they receive the investment funding necessary to make the improvement. As for positive incentives, there are few organizational or personal rewards (e.g., financial gain, advancement, job security, or other employment benefits, and the like) for improving performance. Accurate measurement of performance is seen by many as a threat because they may be shown to be inadequate managers. Lack of cooperation and trust (e.g., playing "authority" and "turf" games) among the various business units (e.g., organizations, functions, work units, and activities) and within these business units may prevent the teamwork necessary for real performance improvement. Often these improvement programs are viewed as, or become, just another management fad or gimmick.

3.3 Productivity Measurement, Evaluation, and Reporting

Problem areas which relate directly to the productivity measurement, evaluation, and reporting are several.

Lack of a Common Set of Measures. There are many different DoD business units measuring many different kinds of performance using a variety of measures. Many of the performance measures are outdated or out-moded. There is little standardization in the development, definition, and use of performance measures. Many are poorly defined or misused. Thus, current performance measures are not reliable measures of performance (i.e., effectiveness, efficiency, and work process, or aspects thereof). As a result, meaningful measurements and comparisons cannot be made. This, in turn, makes it difficult to articulate and manage performance.

Inadequate Metrics for Assessment. Currently, for the purpose of managing performance data, there is a lack of standardized data elements (i.e., metrics) to measure, evaluate, and report. Among the DoD Components, there is little or no sharing of techniques, tools, or data for performance management. The DoD management improvement program proponents do not use a common set of measures or reports to meet program requirements for commonly required information. In addition, these proponents do not routinely coordinate data requirements to ensure linkage of common elements or to ensure utilization of existing data. As a result, the same essential information is frequently requested by multiple functional proponents in the Office of the Secretary of

Defense (OSD) and by the headquarters of the Military Departments and Defense Agencies. Such over-reporting and improper reporting are wasteful of resources, and represent mismanagement. Without clear, reliable performance measurement data, good performance planning is not possible. Without reliable and comparable data, good performance assessment and evaluation are not possible. Furthermore, the reports may not be used because they are inaccurate or non-existent, or have unwanted political or budgetary implications. In addition, because there is little continuity among the different reporting years, there is little possibility for long-term comparison. There also exists a lack of continuity in the flow of data up the chain of command.

Inadequate Communications and Automation. In general, investigations, audits, and evaluations have revealed the poor state of automated performance measurement and reporting, particularly for work measurement and labor standards. Although some automation is being used within each DoD Component, the overall DoD effort is uncoordinated and, in many cases, duplicative. There is a need for an integrated investment strategy to support a coordinated performance measurement system. Funding limitations have reduced the effectiveness of work measurement and labor standards, and have curtailed efforts to improve and automate the process. Without integrated performance measurement databases and systems, effective oversight of performance improvement efforts and results is not possible. Also, there is little or no linkage of performance data (especially work measurement and labor standards data) with resource management and financial management systems. As a result, some DoD business units attempt to manage without performance data, which results in poor and ineffective management, performance, and unnecessary use of scarce resources.

Inadequate Use of Performance Data in Resource Management. There is a movement away from concern for, and reporting of, "productivity" data except in summary form as "unit cost." Even so, where "productivity" data is a meaningful component in measuring, evaluating, reporting, and managing performance, the data are often inconsistent, non-standardized, incomplete, or unreliable. For these and other reasons, performance data are not adequately linked with or used by the resource management systems at the local unit or installation levels, as well as at higher organizational levels, such as Military Department and Defense Agency headquarters, Joint Staff, and OSD. Moreover, there is little indication that the situation is any better for the larger arena of performance measures. The need for, and difficulty in obtaining common, consistent, and comparable performance measures and performance results may be even greater for total performance than for productivity alone. The inadequate link between total performance data (which includes productivity data) and the systems used by managers to manage their resources hinders and discourages the use of performance measurement data in managing business processes.

3.4 Work Measurement and Labor Standards

The problems or deficiencies which apply specifically to work measurement and labor standards are several.

Lack of a Comprehensive Policy on Work Measurement. The role and nature of work measurement has changed dramatically since existing policy was written. Current policy is woefully out of date. There is a lack of a clear understanding of when, where, why, and how to use work measurement and labor standards effectively; as result, they are not used or are used poorly. In general, labor standards seem to be too expensive, too cumbersome, or too detailed for effective use. Engineered labor standards are costly to develop, maintain, and use. Thus, they are rarely cost-effective, except for "high volume-high value" work--the definition of which is unclear. Non-engineered labor standards are not appropriate for most work. A third (middle) class seems to be needed.

Lack of Reliable Labor Standards. As a result of ineffective work measurement policy and inadequate infrastructure, variance analysis and updating of labor standards have not been done in any regular or timely fashion. Many labor standards are out of date or inaccurate, are non-engineered or inconsistently developed, or are poorly documented. As a result, labor standards are unreliable, and thus unusable.

Lack of Standardization of Automated Industrial Engineering Techniques. For all aspects of the work measurement program, there is little standardization or consistency of automated industrial engineering techniques and systems within the DoD. This lack of standardization impacts adversely the collection of work measurement data, development and application of labor standards, use of work measurement and labor standards, and reporting of results. In fact, the lack of common automated support of WM/LS makes it very difficult to improve the other aspects.

3.5 Discussion

Migration of legacy management programs, processes, data, information systems, automated tools, etc.

In summary, the current DoD Productivity Program is outdated and its focus is too narrow in light of new federal government mandates (e.g., NPR and GPRA). Therefore, it needs a major redesign. The redesigned program must be comprehensive enough to incorporate the changing management philosophies within the DoD.

A way to facilitate such an improvement would be to migrate the current legacy performance improvement programs (along with the processes and tools associated with them) to an overall integrated and coordinated improvement program. This program would also integrate improvement of performance with the on-going management of performance. A comprehensive framework to consolidate, re-design and migrate these programs should be developed to perform this integration task. The migration proposed in this discussion can be defined as the effort to consolidate current DoD Performance Improvement programs across functional areas. This effort, in the long term, is intended to reduce cost by cutting out redundancy and improving consistency within the programs. In the short term, it should provide more effective tools for the functional managers. This integration would also include the migration and integration of related automated tools and systems. Not only will

this consolidate the useful programs and the information generated, it will also standardize improvement processes and information (data) in a move toward a compliant target environment and program which will incorporate all new government mandates.

In order to support the comprehensive target program, there seems to be a need for a target automation system (inclusive of automated performance improvement tools) to be developed and/or identified and integrated appropriately. The requirements involved with this type of development task would include the following efforts:

- Review the current legacy systems and their functionality;
- Evaluate the current PPBS system for necessary interface;
- Identify and standardize a common set of data elements;
- Identify a potential target environment and its requirements for data, information/applications, and technology;
- Support managers and executives with automated information and tools for planning and decision making.

Within this new comprehensive policy, the WM/LS should be recognized for its unique role and contribution as an effective management and improvement tool set. Within this integrated framework, WM/LS need to be identified as one of the tool sets in support of productivity improvement. A primary goal for WM/LS is to improve the processes of WM/LS so as to be cost effective and helpful to a manger in doing their job. Then, based on improved WM/LS processes, a common, coordinated automated system for the development and use of WM/LS will provide support in managing applicable work .

4. DEFENSE PERFORMANCE MANAGEMENT: UNIFIED CONCEPT

Section 4 of this "DPPI Project: Baseline Analysis and Improvement Recommendations" report presents the methodology of developing the Defense Performance Management (DPM) Concept, describes the overall activity of "Managing Performance", as well as each of the level decomposition activities, and concludes with a discussion of its generic application to various types of "performance units".

4.1 Methodology

Given the emphasis in the federal government and DoD on performance (as noted in Section 1), and given the extent of problems and deficiencies to be overcome (as noted in Section 3), nothing less than a major redesign of the DoD Productivity Program and related measurements and standards seems needed.

During the 1970's and into the mid-1980's, the focus for improvement in DoD was on improving "productivity," that is, increasing the *efficiency* of resources used by a *Defense Performance Unit*[1] *(DPU)* to produce its output. At that time, labor was the major source of input costs and the target for major improvements in the efficiency of a business/functional area. Thus, for enhancing productivity/efficiency, work measurement and labor standards were a significant factor. It was in this era that the name, policies, and enhancement programs of the Defense Productivity Program were established.

During the late 1980's and into the mid-1990's, the focus for improvement in DoD shifted to improving "quality," as emphasized by the "Total Quality Management" movement. Here the emphasis was on becoming more *effective* in meeting the customer's needs, by providing "the right amount of the right stuff at the right time" to the satisfaction of the customer. It also included developing more empowered, participative employees working in a high quality work-life environment. Measurement of effectiveness focused on output characteristics, such as quantity, timeliness, quality, and customer satisfaction. High quality, effective employees were a critical element in ensuring effective production of a Defense Performance Unit's output.

During both productivity and quality eras, the focus for improvement in DoD was also on improving the "work processes" of a Defense Performance Unit as a primary means for improving both productivity and quality. Here the emphasis was on reducing

[1] **Defense Performance Unit (DPU)**: Within DoD, any group of people (organization, function, team, or individual, established or temporary) and their assigned responsibility for a defined "process area" to produce designated product(s) and/or service(s). A "process area" may be the total endeavor of the enterprise, any component activity or function thereof, any discrete functional effort or procedure, or any assigned task.

unnecessary activities and streamlining the necessary activities for the most efficient and effective accomplishment of the Defense Performance Unit's goals and objectives. Such restructuring of process improvement ranged from making small procedural changes in functional processes to totally redesigning the way the function was performed.

In the late 1990's, as part of the holistic era, all these factors--efficiency, effectiveness, and work processes--will be seen as closely interrelated components in the successful *performance* of any Defense Performance Unit. As such, the emphasis for success and improvement will be on *total performance* which is the appropriate combination of "productivity" (*efficiency)*, "quality" (*effectiveness)*, and "methods and procedures" (*work process)* in accomplishing the mission and satisfying customers. The definition of performance, as well as the measurement of how a Defense Performance Unit is performing, will be a combination of various measures for efficiency, effectiveness, and work processes. [Note: Some sources include *outcome* as one of the components for defining and measuring performance. But *outcome* is more of an evaluation of performance rather than a measure of performance, even when there are some very so-called "objective facts" involved. More importantly, there are many factors involved in determining *outcome* other than the performance of a DPU , and other than the factors under the control of managers. A person may do their best performance in running a race and still lose the race.]

The primary business of the DoD Productivity Program was, and is, to enhance the accomplishment of the work which has been assigned to the DoD. But to accomplish this mission in the current environment, the focus will be on "performance", not just "productivity" alone. Thus, the DoD Productivity Program does not need improving; it needs to be redesigned as a performance management initiative.

The recent DoD IG program evaluation of major DoD management improvement initiatives and tools (reference (25)), noted that there exist many programs and tools within the DoD to assist in improving performance. The DoD IG also noted that all of these programs are variations of basic system analysis and improvement methodology, plus associated tools. Many programs are very similar, often overlapping, somewhat redundant, and minimally coordinated in reference to one another. Because performance is an integrated whole of many factors, performance improvement needs to be an integrated, holistic approach which uses various programs and tools as applicable to a given situation and the specific need of improvement in that situation. Fundamentally, performance improvement is not separate from normal management for successful performance results. Thus, performance improvement is an integral concern and function of all management processes.

Since performance results and performance improvement are both responsibilities of normal management, the focus for the redesign of the "Defense Productivity Program" is on the activity of managing performance. The proposed title for the redesigned business area is "Defense Performance Management"(DPM). This reflects the unified concept of improving total performance (i.e., efficiency, effectiveness, and work process) as an

integral part of daily responsibility for managing performance at any level, making use of a wide variety of improvement programs and tools as needed.

The first step in redesigning a Process (be it the whole business or organization or just one aspect of it) is formulating the new concept of the Process and then developing a model ("To-Be") of the redesigned Process. Because this new concept of managing performance applies to all levels and dimensions of management, it will be presented first in its generic form in this Section, both at the overall context level (A-0)(see Figure 5) and for each of the five decomposed activities (A1-A5)(see Figure 6) . The second redesign step applies the concept, by means of scenarios, to the business/functional environment of the given Process. In Section 5, three scenarios will apply DPM to the DoD as a whole, to current improvement programs, and to Performance Measurement and Expectations. The third step provides recommendations for establishing the redesigned business/function along with next-step action plans for implementing the recommendations. The recommendations and next step actions for establishing the Defense Performance Management Initiative are made in Section 6.

4.2 Manage Performance (A-0)

A DPU is established, people are hired and paid, and resources are provided for one purpose only -- to produce desired results, to perform according to some expectations. As the performance of a car is the concern of its driver (and team), so the performance of any DPU is the concern of a manager. (Let it be understood that, in this report, the term "manager" refers to the function of managing which may be exercised by an individual or a group of individuals at various times in that everyone is ultimately responsible for performance. But, in the midst of this, some person(s) is specifically designated as the "responsible one" who is responsible for making sure that the management function happens and the necessary decisions are made for a given DPU.)

This process of "Managing Performance", as a single composite process, is described with an IDEF0 Context (A-0) diagram in Figure 5. (Definitions of the activities and arrows are included in Appendix C.)

Performance (understood as successful performance which is defined as meeting expectations) is what management is about. Performance is the responsibility of every manager. "Managing Performance" begins with some set of performance requirements[2] from a superior authority and/or customer . A manager then develops a set of specific operating performance requirements (specific plans, programs, budgets, guidance, expectations) for their DPU to produce results which, together, will meet the expectations

[2]**Performance Requirements**: (or "requirements for performance") is a composite term which incorporates all plans, programs, budgets, guidance, and particular expectations. The term also includes all taskings, orders, instructions, regulations, procedures, laws, conditions, contracts, constraints, and any other expressions of the kind of performance desired. Such "requirements" (either singularly or in combination) provide both the impetus to begin performance and the standard by which all performance results are assessed.

placed upon their DPU by a superior/customer. This process begins with the whole enterprise and cascades "down" to every individual, who is their own manager. A manager also needs to make arrangements for the materials and information that are necessary to operate the DPU and produce the expected results. In order to transform the operating materials and operating information into the expected results, a manager makes use of the services of organizations, personnel, facilities, equipment and systems. As performance is under way, assessments concerning the performance will be made and reported to a superior and/or customer. Also, a manager will receive feedback, from a superior and/or customer, which will have a bearing upon the specific plans, guidance, and other requirements provided to his/her subordinates. Whenever performance results are assessed as not measuring up to the performance requirements (i.e., an exception to the plans), then a manager acts to enhance performance to bring it in line with the performance requirements. Improvement of performance is the normal, on-going process of managing performance.

"Managing Performance" is a single, integrated, continuous activity. Every manager is always functioning under performance requirements provided by a superior. Every manager prepares (plans) performance requirements for subordinates. Subordinates continually execute these plans. A manager continually assess performance results in comparison to the requirements for performance. There is also continual feedback to and from each manager for those "above" and "below" him/her. Based on this feedback, plans are revised and updated. Then, whenever there is an exception or deficiency in performance (performance is not measuring up to the requirements as stated or as increased by superior/customer) there are on-going efforts to enhance performance to meet the current operating performance requirements..

But verbal discussion and analysis is, by nature, linear -- there is a beginning and an end. So, in starting with "Develop Operational Plans, Programs, and Budgets" (A1), we pick a point in the midst of on-going management to begin describing the life cycle of "Manage Performance". This is described with an IDEF0 Decomposition Diagram A0 (see Figure 6).

4.3 Develop Operational Plans, Programs, and Budgets (A1)

Managing begins when a set of performance requirements are received from a superior DPU/customer (referred to here as "general plans, programs, budgets and guidance") which specify the performance required of the manager's DPU. In order to meet these requirements, a manager develops operational plans, programs, and budgets (specific performance requirements) for their DPU. Based upon the general plans, programs, budgets, and guidance provided, strategic plans are developed, performance plans are created, performance programs are designed, and performance budgets are prepared -- specifically by and for a DPU.

The bottom-line for performance is results -- successful results. Successful results depend upon an optimal mix of all the factors of performance. But what constitutes

"success"? To be able to achieve successful results there must be some way to designate, objectively, what constitutes success so that one may plan to achieve it, may work toward achieving it, and may know when one has achieved it. If success is not achieved then one must know how far short one is from achieving it, so that corrections/enhancements may be made. Such objective designation involves performance measurements and performance expectations. It has been said that "you cannot manage what you cannot measure." Performance measurements involve deciding what products and/or services are to comprise the DPU's desired results, what measures, metrics or indicators will be used to measure each product and service, and how the measures will be used in measuring the results. Next it is determined what specific, quantifiable values for each measure (singularly or in combination) will constitute successful performance. These designated performance measurements, along with the specified value levels for each, comprise the performance expectations for the DPU. These expectations will involve a mixture of efficiency measures, effectiveness measures, work process impact measures and outcome measures. Measures may also include the use of various standards (pre-set measures with pre-set values, such as baselines, benchmarks, labor standards).

Performance expectations form the basis for managing performance. Tasks and resources are assigned and work is executed in terms of achieving the expectations. Performance results are assessed against the criteria set forth in these expectations. And improvements are made in terms of enhancing performance to meet these expectations. Finally, each DPU will be evaluated in terms of their contribution to achieving these expectations. (To state it negatively, without objective performance measurements and quantifiable values which define success, there is no way to know if a DPU's performance is satisfactory or not, much less know if or how to improve performance.) Therefore the key component in developing performance requirements is establishing performance measurements and performance expectations.

Developing operational plans, programs, and budgets is an on-going process. Specific performance requirements are updated regularly. Updates are based on performance assessments, improvement feedback, exterior feedback, and changing requirements from parent DPUs/customers.

4.4 Execute Operational Plans, Programs and Budgets (A2)

Executing operational plans, programs and budgets is the actual performance of the work which has been planned, programmed, and budgeted. This is the activity of producing the desired products and/or services to the required level of production as set forth in the performance expectations. The work is performed under the authorization of, and according to, the directions set forth in the specific performance requirements -- plans, taskings, programs, budgets, standard procedures, regulations, contracts, etc.

The specifics and breakdown of this activity will be as varied and as complex as the products and/or services being produced. Specifics may also vary by organizations doing the same work if they approach the work differently.

4.5 Assess Performance (A3)

Assessing performance is the third most critical activity in managing performance. (Managing personnel and preparing specific, objective expectations are first and second) This is the work of measuring the product(s) and/or service(s) -- the performance results -- which are being produced in order to determine objectively what has been done. These results are then compared to the level of performance as stated in the performance expectations and related schedules to meet these expectations. This comparison is regularly monitored for compliance or deviation. If results are in compliance, then performance is going successfully -- keep up the good work! If there is a deviation from the expected level of performance , then corrective action is necessary to improve performance and to bring it back into line with the expectations.

Whether this assessment is quick (the pressure needle is in the red danger zone; turn down the heat in the boiler) or slow (During this year, 25% of the trainees failed the certification, maybe the training curriculum needs to be revised.), the basic processes are the same. (See IDEF0 Decomposition Diagram A3 in Appendix C.)

Given the specific performance requirements (particularly the performance expectations), **monitoring requirements** are determined. This is done by deciding what aspects of performance and its results need to be considered, how often, in what ways, in what format, and so forth, in order to provide a meaningful indication of the DPU's performance. This also includes determining what comparisons are necessary and meaningful to provide indications as to compliance with, or deviation from, the performance expectations. This is basically determining how and when to observe performance results.

Next the actual performance **results are monitored** according to the monitoring requirements. This is just objectively noting the performance results and how they compare to what the performance results should be, as stated in the operations plan -- particularly in the performance expectations. The primary purpose of this activity is to identify exceptions to the performance requirements or deviations from expected levels of performance. Exceptions will require remedial action; if not, then performance will not be successful.

After the measured results are monitored for compliance or deviation, certain results are more carefully **analyzed** to determine exactly what is happening with performance. The requirements for conducting analysis of performance results have been determined by the management of this process. Analysis is necessary for all deviations from or exceptions to normal performance procedures and expectations. All aspects of related operations are

analyzed to ascertain more specifically what is actually involved with the exception, what is causing the results to be as they are, and what may be the base cause of the problem.

But even when performance is going well, certain aspects of performance will require periodic **inspection and analysis** as part of regular maintenance, prevention, and/or readiness efforts for these work processes. This is to ensure that the level of performance will continue, or will be able to continue, at the expected level. **Variance analysis** is one particular instance of this type of periodic measuring and analysis. Variance analysis is performed on a regular, periodic basis whenever pre-set standards are used in the management of performance. Such analysis is done to verify (and update) the accuracy of the standards and/or their use.

Once the situation is more clearly understood through analysis, **an evaluation** is made. What does all this mean? What are the possible explanations? How do we weight and compare the factors? What are the alternatives? What are the risks? What kind of response is needed and how soon? and similar questions. An evaluation, in the end, is a judgment call by the manager as to the nature and status of the performance of their DPU.

Based on the monitoring, analysis and evaluation, **recommendations are made for corrective action** which will bring performance back in line with expectations. These recommendations, along with other comments and observations, are fed back to the planning process to update performance requirements necessary to improve performance. Sometimes recommendations and feedback may go directly to operating processes where the corrections need to be made. Further feedback is provided to the assessment process itself, detailing how useful the various requirements for monitoring, analysis, and evaluation were.

This activity of assessing performance is sometimes called "oversight" or "accountability" or "review". By whatever name, it is the heart of the fine art of managing. It is true that "you cannot manage what you cannot measure". It is also true that "you cannot manage if you don't measure". Furthermore, no one will bother to measure if the results of measuring are not called for and acted upon seriously. (No student will do their homework if the teacher does not call for it, does not grade it, and most importantly does not base a grade on it.) Also, the assessment must be done often and regularly. It does no good to provide grades to a student two years after they have graduated. In the same way, it does no good to assess a DPU's performance two years after the money has been spent, personnel have been reassigned, and the new information system still does not work. Assessment must be done at least quarterly for yearly performance expectations and annually for five-year performance expectations. Performance plans that are particularly time and money sensitive, as well as all small DPUs, should be assessed an even more regularly, such as monthly.

Assessment is very dependent upon reliable, accurate, real-time data and tracking systems across all related functions and processes. With decent, automated management systems, monitoring is an automatic by-product of operations. With objective, quantifiable, and

measurable performance expectations and results, a computer can count, compare, and notify the manager of performance deficiencies. Until so notified, the manager is free to deal with personnel and customers to keep them happily productive and satisfied, respectfully.

Successful performance depends upon the vigilance of the manager in assessing the performance of their DPU and acting decisively to deal with any exception or deficiency.

4.6 Enhance Performance (A4)

In response to existing or potential exceptions, corrective actions that are within normal and on-going operational responsibility are referred directly to operations for implementation. (e.g. The car is traveling at 80 mph approaching a 45 mph turn; apply foot to break. We are two days behind delivery, repair the broken machine and get it back on line. Authorize overtime to get the pay checks out before Friday.)

Other assessments may indicate more serious, extensive, and/or systemic problems to be addressed in order to improve the DPU's performance and/or to ensure that it will continue to perform or be ready to perform at the expected level. Other assessments may indicate problems or potential problems, but it is not clear what needs to be done except that more extensive analysis is required before recommendations can be made. Also there are occasions when a change in the general performance requirements from a superior DPU/customer calls for improved performance. In response to such concerns for improved performance the manager plans and authorizes special efforts to enhance performance. (See IDEF0 Decomposition Diagram A4 in Appendix C.)

These efforts are special in that personnel, time and money above normal operational levels need to be focused on the effort to identify and make the improvements necessary to enhance the performance of the DPU. This will require particular planning (establishing particular performance requirements for such an improvement effort, along with acquiring and/or reassigning resources) for the improvement effort. Such efforts may be small and quick -- we have to train 50 personnel on this system in 5 days rather than the normal 10 days. Or they may be large and extensive -- we need to have real-time (accurate within 7 days) financial accounting across all functions of the DPU. Or they may be anywhere in between -- how can we keep better track of 'self-help' supplies? How can we reduce maintenance costs on military vehicles at Fort Snappy?

Because all process areas are interrelated with many other process areas and because changes in one aspect of a process area impact many other aspects, any improvement effort must be carefully planned and managed. Of particular importance is identifying precisely the focus and scope of the improvement effort -- else it can become too large, unwieldy, and off-target with much time and effort spent going nowhere.

Whether the manager sets the focus and approach in the specific performance requirements for the improvement effort or only sets the general parameters, the management of the performance enhancement effort needs to reestablish and refine the focus, scope, goals and objectives of the improvement effort. Initial, gross analysis needs to be performed to identify more precisely the nature of the problem(s) and the viable area(s) for improvement.

For each improvement effort, there are many facets. For improvement efforts that focus on a large process area or a large DPU there will be multiple sub-component improvement efforts. And for any particular improvement effort, there are various aspects, dimensions, levels, and iterative steps. Thus, each improvement effort is an intricate web of component parts. These parts require careful and continuous coordination to prevent bottlenecks, delays, expensive duplication, major rework, or a non-useable "improvement" that is 'too little, too late'. Such coordination begins in the preparation of requirements (plans) for performance improvement.

There are a great variety of approaches, programs and tools for improving performance. It is important to select the program(s) and tool(s) most appropriate for the area and nature of the improvement desired. Once the specific improvement areas have been decided upon, (then and only then), the proper approach, program and/or tools most appropriate to problem area will be selected and provided. (The objective is to solve a problem, not to use a tool.) There is no "silver bullet" approach or tool for improving performance, just as there is not one "fix it all" approach and tool for repairing an aircraft. Good planning will make use of selected aspects from various programs and tools designed for the particular challenges of the given improvement efforts.

Next, plans (tasks, schedules, budgets, assignments) are made to proceed with designing improvements for each area. Other guidance, directions, standards, comments, procedures, etc. are developed. It is important to remember that an improvement process is an iterative process of discovery and proposed options, discovery and proposed options. It is the job of performance enhancement management to guide the improvement effort through the critical path of options and decision points, to keep it "on target" and to manage the interrelations and impacts with other process areas. Providing plans and guidance for the improvement effort is an on-going process.

Once the requirements for performance improvement are approved, the next step is to design the improved operations. The design of operations improvement involves all efforts of analysis to describe the current operating situation and to identify the existing problems and opportunities for improvement. It also recommends improvements to be made, and describes alternative operations improvements with preliminary analysis of their feasibility so that they may be evaluated. With the approval to proceed with one of the alternatives, specific functional requirements for the improved operations are designed. (Performance may be enhanced by improving any one, or any combination, of the performance factors such as equipment, facilities, personnel, organizations, regulations, procedures, quality, timeliness, quantity, management style and procedures,

information systems, etc.) Operational staff and employees are critical in defining how things actually operate, identifying problems, building workable solutions, and defining the functional requirements of an improved process area.

When the improvement design package is approved, the operations improvement is then validated. This is the process of incrementally prototyping the improvement components, testing them, evaluating the results, reworking them, and combining them until the improved operation functions properly. Operational staff and employees again play a critical role in testing and evaluating the improvements. Once the improvements have been practically tested and enhanced so that they are functionally ready for operational use, recommendations for deployment are prepared. These recommendations include such things as plans, selected sites/operations, resources, schedules, procurements, training, site prep, transition, etc.

Once the deployment package is approved and authorized, the improvement is made operational at the selected sites/operations. Any combination of efforts may be involved--procurement, installation, training, monitoring procedural or style of operation changes, preparing new regulations, evaluations, change management, etc.

During all of this, the improvement effort steering group is carefully overseeing and integrating all the aspects of the improvement effort. They provide quality assurance for the products. Most critically, they assess the situation and the options which result from each step of discovery and recommendation. Because the full nature and extent of most improvement solution(s) cannot be known ahead of time (but can only be ascertained by iterative discovery, recommendation, trial, and discovery) the steering group requires authority and latitude to proceed on their own within general parameters. At critical path junctures they make recommendations and decisions as to how to proceed toward the most effective and efficient improvements for enhancing performance.

Improvements often call for significant changes in operations, especially for consistency and commonality. When parties involved in the changes cannot agree on the nature and content of proposed improvements, the performance enhancement management is responsible for bringing the issue to resolution, either by negotiations or administrative decision. Improvements cause impact and ripple effects through out the DPU. These require sensitive "change management" by both the steering group and the DPU management.

Improvement efforts founder and fail most often because of non-existent or in-effective management and oversight of the improvement effort. The establishment and empowerment of a management/steering group for each improvement effort is the foundation of success.

4.7 Support Performance Management (A5)

The management of performance to achieve expected results does not happen by itself. It requires support -- promotion and consultation, training and motivation, coordination and integration of improvement programs and tools, along with research and studies on improving performance. (See IDEF0 Decomposition Diagram A5 in Appendix C.)

Such support efforts are managed in the same manner as any other work effort. Besides normal planning and oversight, this activity receives and routes inquiries and requests for assistance relative to managing performance.

Managing for performance is a major change for DoD culture. It will require strong promotion and encouragement for managers to make such a change. Support will provide information, consultation, guidance and other assistance (both public and personal) to assist managers in understanding and applying performance management in their DPU, particularly in the area of improving performance. This function also responds to inquiries and requests for basic information.

Promotion and information cannot carry the day if basic performance management skills and motivation are lacking. Support provides training and motivation for all personnel in the ways and means of managing performance for results.

With the growing number and variety of approaches, programs and tools for improving performance, managers need a centralized location which maintains a coordinated and integrated inventory of available programs and tools to assist them in managing for performance. This centralized service will help managers understand the nature and value of the various programs and tools, and will help managers in selecting and coordinating the use of those most applicable to the particular improvement need(s) to be addressed in their DPU. This coordination service also serves as a clearing house for, and coordination of, the use of these programs and tools. Because improvements often cross and/or impact other DPUs or can be reused/reapplied to other DPUs, all improvement efforts will be monitored, coordinated, and integrated for maximum benefit and effective/efficient use of resources. This service also acts as the "help desk" for those making use of improvement programs and tools.

Management and the improvement of performance is an ever growing and expanding field which is constantly responding to new challenges and changing situations. Management support, on behalf of all managers, seeks to keep abreast of developments in this field by means of research and studies on performance improvement. The results of such research and studies are made available through promotion, training, and the coordinated program/tool inventory.

All these activities provide feedback to Support Management so that the work of support itself may improve its performance. Support Management in turn provides status reports and feedback to the DPUs which are being supported.

4.8 Discussion

This process of Managing Performance is applicable to all performance units -- organizational units, functional units, work units, teams, and individuals. An "organizational unit" is any formally named unit within an enterprise's organizational breakdown structure, including the total enterprise itself as a performance unit. A "functional unit" is a formal cross-organizational unit which focuses upon a particular kind of work regardless of organizational structures. A "work unit" is a task-oriented group within an organizational unit. A "team" is a cross-organization and/or cross-work unit grouping of people with particular focus of performance responsibility -- often ad-hoc or temporary in nature. An "individual" is a single instance of personnel, with specific responsibilities for performance results.

Organizational Unit. An organization as a whole and every organizational unit within its structure will plan, execute, assess and enhance performance, and will support this management effort. But at the enterprise level and in large organizational units, there will be organizational units which focus, on behalf of the whole organization, on particular activities within this process. There may be organizational units which concentrate on preparing specific performance requirements (preparing plans, programs, budgets, guidance, etc.) and on supporting other units in doing their performance requirements. While every unit receives performance requirements and must in turn plan how they will carry out their required performance, some organizational units concentrate on executing the operational plans for producing the product(s) and service(s) of the parent organizational unit. (But it must be remembered that management and support units have their own work to execute--producing plans, assessments or guidance, providing personnel support, maintaining computer systems, etc..) There may be units and sub-units which concentrate on assessing performance of the organization and its components as well as assisting other units in their assessments. Still other organizational units may focus on enhancing the performance of the larger organizational unit and/or its various components.

For organizational units, the processes of planning, executing, assessing, enhancing, and supporting will be more formal and structured. There will be established procedures, requirements and schedules for implementing all the steps of managing performance. There will be more specialized and structured support for these processes, such as tracking systems, reporting mechanisms, accountability checks, information, tools, data systems, etc.. The higher in the organizational structure, the more formal and structured are the requirements for these processes.

Primary performance expectations are set for the enterprise and/or for its major organizational units. These, in turn, are broken down and distributed to lower organizational units. Every manager of an organizational unit reports to a manager and is reported to by managers under them. Thus planning, assessment, and enhancement activities flow up and down the organizational network. While it is top management's responsibility to oversee this whole process and manage the performance of management,

it is incumbent upon every manager to see that this process functions well by playing their own role well. For organizational units, managing performance is a team effort.

Functional Unit. A functional unit is responsible for a particular kind of work within the total (enterprise) organization. It may encompass several organizational units and/or portions thereof. It may be part of the formal organizational structure, or it may be an informal coordinating group. It may be an organizational unit with specialized functional responsibility.

In terms of managing performance, functional units operate like organizational units. This is especially true of functional units that are part of the formal organizational structure. Each functional unit is expected to produce particular products and/or services. A manager of a functional unit will prepare performance plans with measures and expectations and then manage the functional unit to perform accordingly. As with organizational units, functional units that are larger/higher in the organization structure have more formal performance management requirements than smaller functional units.

Work Unit. A work unit is a group of personnel which is responsible for a particular task, to accomplish specific results, within an organizational unit. The task may be a structured part of an organization (health benefits section, vehicle inspection section) or it may be established to carry out a time-specific work assignment. Work units have specific performance expectations assigned to them by an organizational unit's management. The management of performance is very specific and focused for each step performed by a work unit.

Because "distance" between decisions, actions, and results in a work unit is comparatively short and direct, processes in managing work unit performance are simpler, quicker, and more sensitive to detail. For this reason, management is also more informal and has more participation by members of the work unit in the various processes of managing performance. The planning is concentrated on how to carry out the work so as to meet the performance expectations -- the first step of which is to make sure that the expectations are clear, specific and quantifiable. The main effort is upon execution. Assessment against their performance expectations is direct, regular, and on-going. Enhancement efforts will be specific and more immediately beneficial.

A work unit will participate in, and make use of, the organizational unit's performance management systems, tools, and support.

Team. A team, like a work unit, is constituted to accomplish a particular performance responsibility. In this case it would be a responsibility which crosses the responsibilities of several organizational units and/or work units. The team would be composed of individuals representing the particular units and skills necessary for the joint effort. Teams are of a more ad-hoc or temporary nature.

But in terms of managing performance, teams function like work units. They have specific performance requirements --they were formed just to meet these performance requirements. Thus, once the specific performance expectations are confirmed, all management effort is focused on meeting those expectations.

Individuals. Each person in a DPU is responsible for performance results. Each person, individually and as member of the corporate "team", is expected to produce goods and/or services at a certain level of performance. Thus, each person has responsibility to manage their performance, and when it is not up to expectations, to improve that performance.

The individual is provided with performance requirements in the form of job descriptions, work assignments, deliverables, and/or deadlines. An individual creates and records, mentally or mechanically, their plans for accomplishing their work; then they set about doing their work. Informally and mentally, an individual is constantly assessing their work. Often their colleagues provide some assessment. ("Who forgot to return the tools to the tool box?" "That report is three days overdue, when are you going to get it to me?") Managers provide assessment informally on an on-going basis, and formally as required by the organization's personnel policy. Since annual and even semi-annual assessment of an individual is usually too little, too late (except for career management concerns), the on-going informal assessment by a manager is more meaningful and helpful. Enhancement for the individual may involve such things as skill development, training, coaching, counseling, time management, learning new procedures or equipment, participation in professional or skill groups, or just "getting the lead out". Support for individual performance management comes first from an individual's manager in terms of personal conversations and assistance. The other main source comes from the organization's personnel motivation and training efforts.

While the performance of a DPU is finally the responsibility of its manager -- the one responsible for seeing that all the factors of performance function well together to produce the desired results -- the individual is finally the one who makes things happen, the one who finally produces the results. It is an individual who finally assesses the situation, determines the necessary effort to produce the required results and sees that the decision is implemented. The final individual is the final manager. All performance is management.

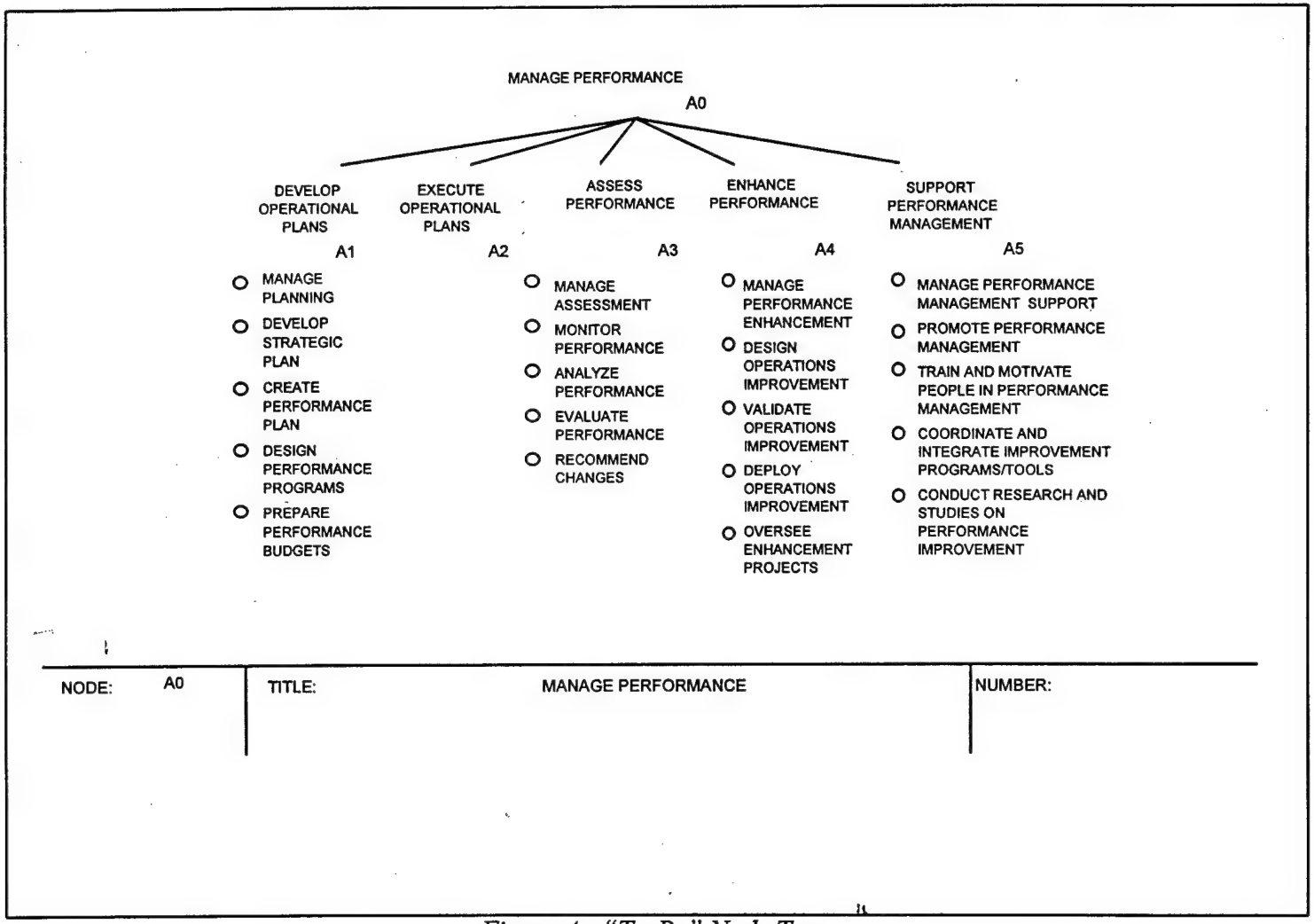

Figure 4: "To-Be" Node Tree

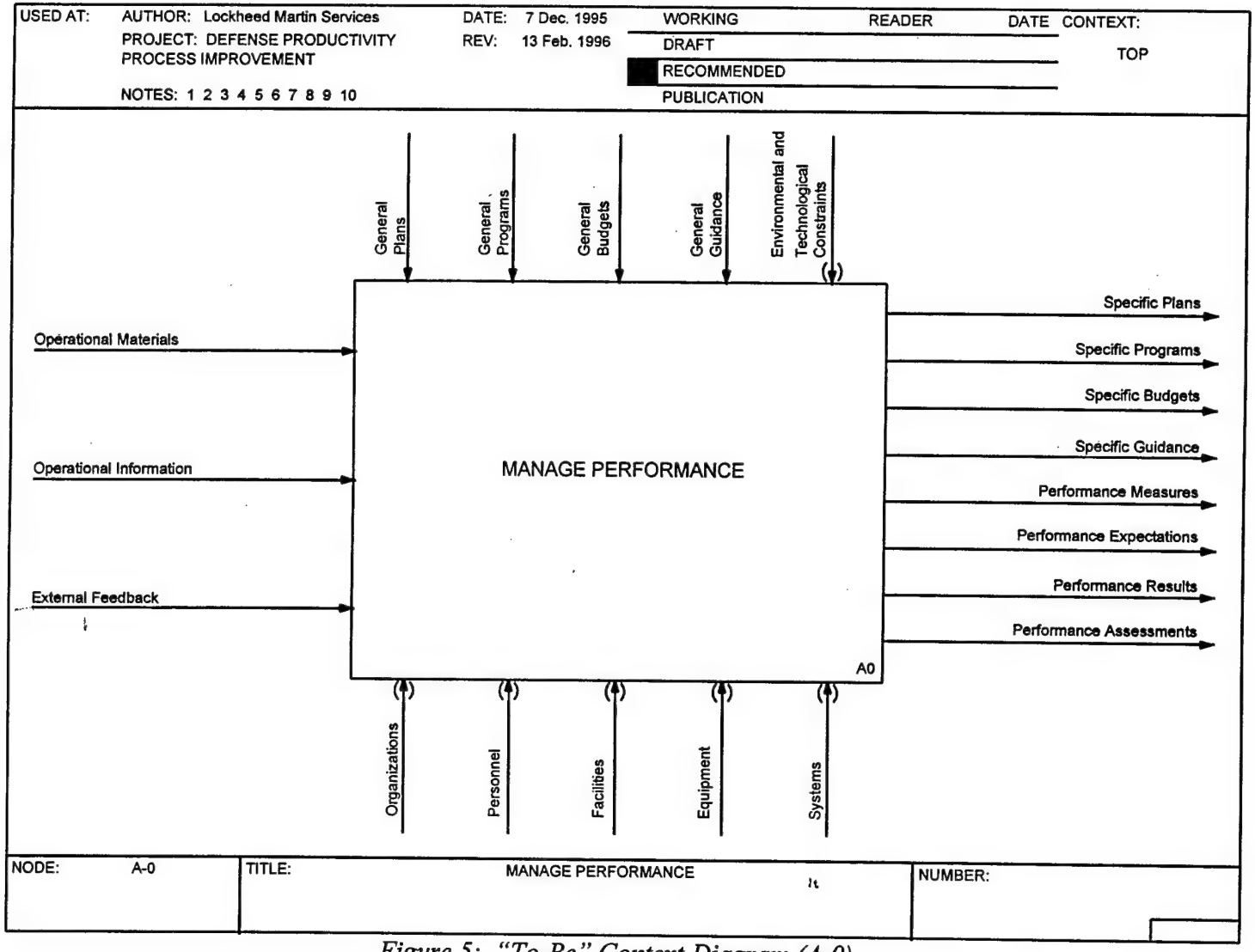

Figure 5: "To-Be" Context Diagram (A-0)

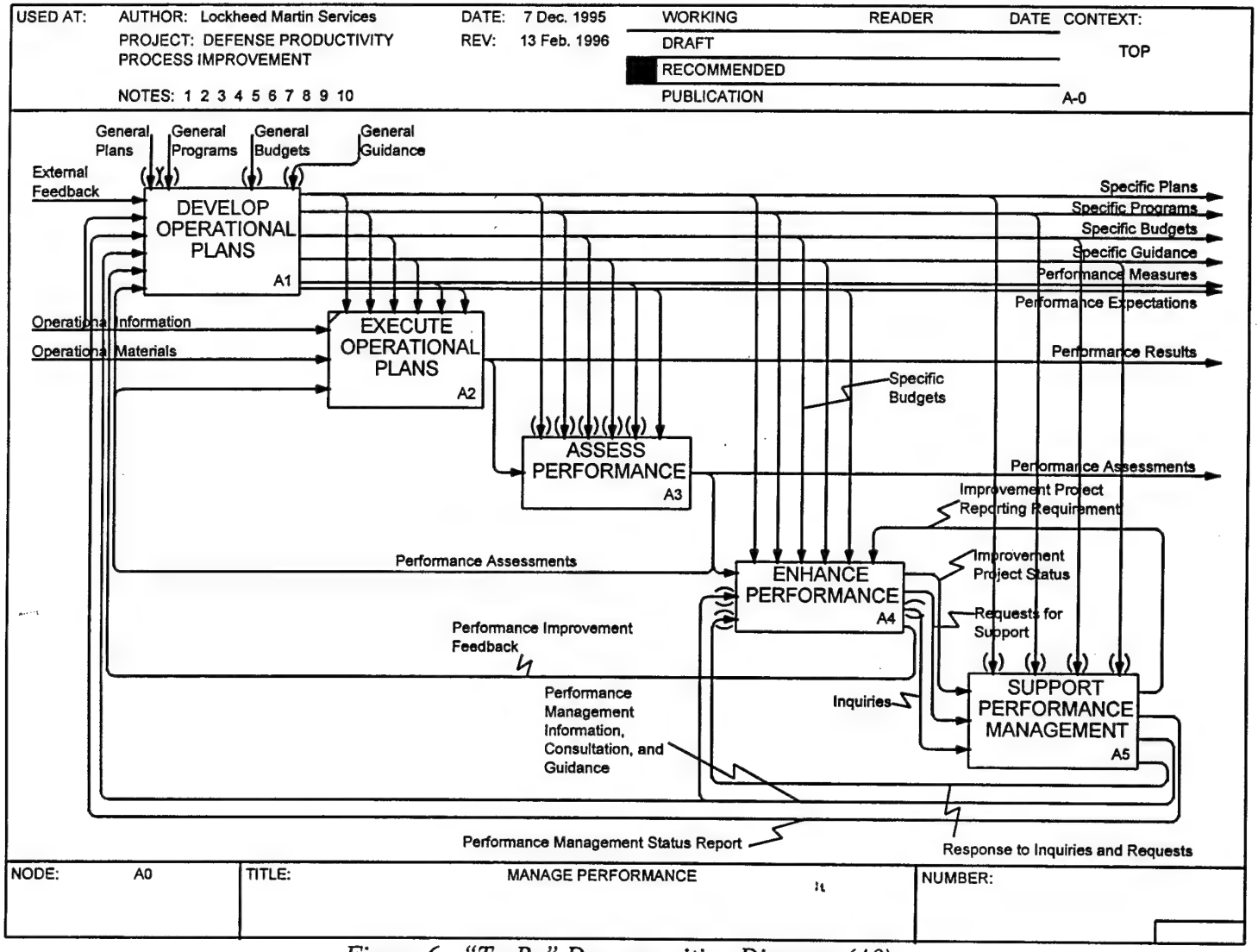

Figure 6: "To-Be" Decomposition Diagram (A0)

5. THE PROPOSED INITIATIVE

Section 5 of this "DPPI Project: Baseline Analysis and Improvement Recommendations" report describes the methodology used to apply the unified concept of defense performance management to the Department of Defense organization as a whole, outlines a proposed Defense Performance Management initiative for Department-wide implementation, describes its relationship to the existing defense improvement programs and tools, describes its relationship to the performance measures, expectations, and assessments required for Government Performance and Results Act implementation, and discusses the need for Department-wide consensus on next steps.

5.1 Methodology

Based on knowledge of the current baseline productivity concept and processes (Section 2), the known problems, deficiencies, and other opportunities for improvement (Section 3), and the unified concept and processes of defense performance management (Section 4), the project working group attempted to apply this knowledge to managing defense performance from the top-down perspectives of the Secretary of Defense and the Deputy Secretary of Defense. This approach resulted in a proposed Defense Performance Management (DPM) initiative intended to coordinate and integrate better the existing defense improvement programs and tools, and to support better the implementation of the Government Performance and Results Act (GPRA) within the Department of Defense (DoD) as a whole.

5.2 Defense Performance Management Initiative

If the "Manage Performance" unified concept and process model may be applied to any organization (see Section 4), then it may be applied to the DoD as a whole. The DoD operates under current environmental and technological constraints and general plans, programs, budgets, and guidance that comprise external controls on its "Manage Performance" process. Basically, these performance requirements for the DoD consist of items such as the President's Budget, funded federal programs, executive orders, Federal legislation, Federal regulations, US Foreign Policy, National Security missions, goals and strategies, requirements from DoD customers, etc.. The DoD uses all operational materials, operational information, and external feedback which are needed to produce all the goods and services required of the DoD (performance results). These inputs are also used to produce the specific plans, programs, budgets, and guidance and the performance measures and expectations which serve as internal controls on the sub-processes for "Manage Performance" of the DoD. The organizations, personnel, facilities, equipment, and systems that comprise the DoD infrastructure support the "Manage Performance" process and its subprocesses. The proposed DPM initiative would implement this unified concept and process model within the DoD as a whole.

In the proposed initiative, the Secretary of Defense and the Deputy Secretary of Defense would have cognizance of the overall "Manage Performance" process. On their behalf,

the Office of the Secretary of Defense (OSD) Principal Staff Assistants (PSAs) would have cognizance of the individual "Manage Performance" subprocesses. Each subprocess would have a "lead" PSA assigned as the Office of Primary Responsibility (OPR) for that subprocess. In addition, each subprocess would have "supporting" PSAs assigned as Office of Secondary Responsibility (OSR) for that subprocess. The OPR would be responsible for issuing overall policy applicable to that subprocess and for coordinating and integrating OPR and OSR support for that subprocess to ensure that DoD efforts build upon, and synergize with, one another and are not unnecessarily overlapping, duplicative, or otherwise wasteful of resources. Based on the current PSA responsibilities, proposed PSA OPR assignments follow below. Other PSAs and the heads of the DoD Components would also have cognizance as OSRs in their respective mission or functional areas.

- *Develop Operational Plans (A1).* This subprocess represents the DoD Planning, Programming, and Budgeting System (PPBS) for which the Under Secretary of Defense (Comptroller) (USD(C)) has overall cognizance as the OPR.

- *Execute Operational Plans (A2).* This subprocess represents execution of the plans, programs, and budgets under the PPBS for which the USD(C) has overall cognizance as the OPR.

- *Assess Performance (A3).* This subprocess represents defense readiness and force management responsibilities for which the Under Secretary of Defense for Personnel and Readiness (USD(P&R)) has overall cognizance as the OPR.

- *Enhance Performance (A4).* This subprocess represents acquisition and technology responsibilities for which the Under Secretary of Defense for Acquisition and Technology (USD(A&T)) has overall cognizance as the OPR.

- *Support Performance Management (A5).* This subprocess represents administration and management responsibilities for which the Director of Administration and Management (DA&M) has overall cognizance as the OPR.

The proposed DPM initiative would also encompass the assignment of OPR and OSR responsibilities for coordinating and integrating all existing DoD improvement programs and tools, and for developing the defense performance measures, expectations, and assessments supporting the DoD strategic plan, annual performance plan, and annual performance reports required by GPRA. Discussions of the relationships between the DPM initiative and these requirements follow.

5.3 Relationship to Existing Improvement Programs and Tools

Improving performance is an integral aspect of managing performance, as noted earlier (Section 4). Enhancing the performance of the DoD as a whole involves a wide variety of improvement programs. Also, a wide variety of improvement tools is available

(reference (25)). The "Manage Performance" unified concept and process and the DPM initiative would incorporate and integrate existing programs and tools that are designed to assist managers in improving the performance of their Defense Performance Units. Discussions of how major defense improvement efforts would function under the proposed DPM initiative follow.

Resource Management. The DoD PPBS is the primary resource management process in the Department (reference (92)). It encompasses developing and issuing the Defense Guidance, Fiscal Guidance, Program Objective Memoranda, Program Decision Memoranda, Program Budget Decisions, Five Year Defense Program (FYDP), and other guidance required for operational planning and execution.

Resource management also includes programs and tools for planning, executing, assessing, and enhancing defense performance. Such programs include implementation of the Chief Financial Officers Act, Federal Managers' Financial Integrity Act, Government Performance and Results Act, National Performance Review, Defense Performance Review, and Defense Management Review, among others. Such tools include performance budgeting, Defense Business Operating Fund, program evaluation and economic analysis, independent cost, and cost and operational effectiveness analysis, among others.

The USD(C) is the primary OSD PSA responsible for supporting the DoD PPBS. Under the proposed DPM initiative, the USD(C) would serve as the OPR for the "Develop Operational Plans (A1)" and "Execute Operational Plans (A2)" subprocesses, and as an OSR for the other DPM subprocesses.

Productivity Management. The Defense Productivity Program (reference (1)) focuses management attention on achieving maximum defense outputs within available resource levels by systematically seeking out and exploiting opportunities for improved methods of operation, in consonance with the Defense Preparedness mission (see Section 2). Although it emphasizes labor productivity, it includes all other aspects of productivity, such as total factor productivity and unit cost measurement.

The Defense Productivity Program supports a variety of programs for assessing and enhancing performance, such as methods and standards improvement, work measurement and labor standards, productivity-enhancing capital investment, efficiency review and requirements determination, and workforce motivation and training. It also supports a variety of tools, such as industrial engineering, management engineering, value engineering, economic analysis, and program evaluation. These approaches may be useful in the DPM planning, assessment, and enhancement subprocesses.

The USD(P&R) is the primary OSD PSA responsible for supporting the Defense Productivity Program. Under the proposed DPM initiative, the USD(P&R) would serve as the OPR for the "Assess Performance (A3)" subprocess, and as an OSR for the other DPM subprocesses.

Acquisition Management. The Defense Acquisition Program is a disciplined management approach for acquiring defense systems and materiel that satisfy the operational user's needs (DoD Directive 5000.1, "Defense Acquisition," February 23, 1991 (reference (94)). It encompasses Research, Development, Test, and Evaluation (RDT&E) and Procurement programs for both major and non-major items.

RDT&E is a technical effort by laboratories and engineering centers involving the advancement and application of science and technology to improve defense performance. RDTE's role in enhancing defense performance comes at the point when a manager determines that performance problems and deficiencies or other opportunities for performance improvement exist which may be amenable to RDT&E solutions. For example, such solutions may include improved systems or materiel items, improved production processes, or other changes in the DoD infrastructure which are needed to improve an aspect of defense performance. At that point, RDT&E managers would be asked to assess this particular new performance requirement and proceed with appropriate efforts to develop improved systems, materiel, processes, or other infrastructure changes which enhance defense performance.

Procurement is the acquisition, by contracting or otherwise, of the products and services necessary for mission performance. Procurement's role in enhancing defense performance comes at the point when a DPU manager determines that such products and services are needed. In this sense, products and services include all DoD infrastructure requirements regardless of the specific types of funding used to procure them.

The Defense Acquisition Program also supports tools for enhancing performance, such as value engineering, "should cost," and "design to cost" approaches. These tools support both RDT&E and procurement of defense products and services.

The USD(A&T) is the primary OSD PSA responsible for supporting the Defense Acquisition Program. Under the proposed DPM initiative, the USD(A&T) would serve as the OPR for the "Enhance Performance (A4)" subprocess, and as an OSR for the other DPM subprocesses.

Commercial Activities Management. The Defense Commercial Activities (CA) Program (DoD Directive 4100.15, "Commercial Activities Program," March 10, 1989 (reference (95)) policy is to ensure mission accomplishment, achieve economy and quality through competition, retain governmental functions in-house, rely on the commercial sector, delegate decision authority and responsibility, and share resources saved or earned so that defense operations or working and living conditions may be improved. It applies to all defense missions and functions, with certain exceptions.

An on-going management issue for many DPU managers is whether a product or service for which they are responsible may be supplied more effectively, efficiently, and economically by a government organization (i.e., in-house), by contracting some part of it

out, or by privatizing it altogether. The DoD CA Program supports tools which help a manager to analyze performance needs and determine the appropriate course of action. These tools may be useful in the DPM planning, assessment, and enhancement subprocesses.

The USD(A&T) is the primary OSD PSA responsible for supporting the DoD CA Program. Under the proposed DPM initiative, the USD(A&T) would serve as the OPR for the "Enhance Performance (A4)" subprocess, and as an OSR for the other DPM subprocesses.

Information Management. The Defense Information Management (IM) Program (reference (2)) seeks to improve information systems and technology as a means of improving defense performance. Because improving the way work is done before automating the work process is critical for effective use of resources, the Defense IM Program supports a wide variety of process, data, information systems, and information technology improvement programs and tools.

If, at any point in the management of a DPU, the manager determines that improved information management is required to improve performance, the Defense IM Program would be the place to begin seeking assistance. Because of the wide variety and complexity of the programs and tools available, the management of performance enhancement must carefully analyze DPU improvement needs and then apply these programs and tools selectively as discoveries and developments warrant. The DPU manager and the performance improvement team must tailor these programs and tools to the particular situation and requirements.

Functional Process Improvement (FPI) or Business Process Re-engineering (BPR) methodology is a performance improvement approach which focuses on increasing defense performance by improving the work processes involved in performing an organization's mission and functions. Various tools are available to implement this approach, such as IDEF0 Activity Modeling, Activity Based Costing (ABC), IDEF1X Data Modeling, and Functional Economic Analysis (FEA), among others. These tools may be used to improve individual work processes as well as support information systems and technology improvement programs.

If changes in the way "business is being done" (whether for a whole organization, function, or component work process) are necessary to improve performance, then a process improvement approach would be an appropriate way to proceed. The extent of its use may range from as short as a few hours spent to improve a particular procedure, to as long as several months or years invested to re-design a whole organization, function, or work process. For a specified improvement area, process improvement guidance would support planning, design, validation, and deployment aspects of enhancing performance. Since process improvement methodology identifies interrelationships among all factors effecting performance, it may result in a decision to pursue additional avenues of improving defense performance.

Process improvement is a critical aspect of preparing, validating, and updating performance measures and expectations, particularly labor standards. Before establishing performance expectations, the work processes (i.e., methods and practices) should first be improved. Only then can performance of the work processes be effectively measured and standardized. Process improvement programs and tools can be used to identify non-value-added work, critical paths, bottlenecks, overloads, and other concerns which must be addressed in order to improve the work process and the information systems and technology required to support it.

The Assistant Secretary of Defense for Command, Control, Communications, and Intelligence (ASD(C^3I)) is the primary OSD PSA responsible for supporting the Defense IM Program. Under the proposed DPM initiative, the ASD(C^3I) would serve as an OSR for all DPM subprocesses.

Quality Management. The Defense Quality Management (QM) Program (DoD Directive 5105.53, "Director of Administration and Management," May 24, 1988 (reference (96)), applies the power of teamwork, individual contributions, quantitative methods, and systems theory to achieve defense performance improvement. It relies on leadership from all DoD executives to create a quality culture and work environment that will encourage active participation of all members of the DoD along with its customers and suppliers in identifying and implementing opportunities for innovation and continuous improvement. In this quality culture and work environment, DoD employees are empowered to surface problems and fix those for which they have resources. Responsible initiative is required throughout the Department, where resources are limited. Mutual trust between the organization and its employees must be fostered so that everyone is committed to the organization's mission.

The QM philosophy and style are completely compatible with the DPM initiative. Also, QM programs and tools are equally useful in DPM. Both QM and DPM focus on the process of performance improvement as an integral aspect of DPU management. Although QM is not the only management philosophy and style that can be employed in DPM, QM's concern with worker involvement in, and responsibility for, developing and operating more effective and efficient work processes is fundamental for establishing performance measures and expectations, as well as achieving performance results.

The DA&M is the primary OSD PSA responsible for supporting the Defense QM Program. Under the proposed DPM initiative, the DA&M would serve as the OPR for the "Support Performance Management (A5)" subprocess, and as an OSR for the other DPM subprocesses.

Programs and Core Requirements. The DoD Inspector General (DoD IG) recently evaluated active and canceled management improvement programs (reference (25)). Figures 7 and 8 (at the end of this Section) list and cross-reference them to the DPM subprocess to which each program chiefly relates. Also, the DoD IG identified 19 core

requirements recurring in all of these programs. Figure 9 (at the end of this Section) lists and cross-references them to the DPM subprocess to which each requirement chiefly relates. These cross-references indicate that the DPM initiative provides an integrating framework for managing all defense improvement programs and tools.

One-Stop Shopping. As noted above, there are many programs and tools available to assist managers in improving the performance of their DPUs. Some may overlap or duplicate one another unnecessarily. Also, some may be promoted or prescribed as the "silver bullet" to solve all defense performance problems, without adequate consideration of their limits of applicability. The inappropriate application of a program or tool can waste time and resources, and potentially result in unusable products or services.

The DPM "Support Performance Management (A5)" subprocess will oversee the coordination and integration of improvement programs and tools into a cohesive whole so that they will complement one another. The result will be a coordinated and integrated inventory of improvement programs and tools, plus a single focal point which allows DPU managers to do "one-stop shopping" for all of the assistance they need to improve DPU performance. The DPM focal point will provide consultation and advice for selection and use of these improvement programs and tools. The focal point will assist DPU managers in determining the types of improvement which are needed, selecting the most appropriate combination of programs and tools, and applying them to DPU performance improvement. The focal point will also assist in arranging for necessary training in the use of these programs and tools. Thus, the focal point will operate the "DPM Service Center."

The purpose of the DPM initiative is not to develop performance improvement programs or tools to compete with or replace the existing government or private sector programs and tools. Its purpose is to identify, coordinate, and integrate the existing programs and tools, and to make them available to DPU managers in a way that will support appropriate application to their particular needs. These existing programs and tools will continue to be offered and supported by their current proponents. The service center will serve as a clearinghouse or a "retail outlet" for all programs and tools that are available from DoD and other sources. In this role, it will also seek to coordinate and integrate performance improvement efforts that are both in progress and under consideration, so that they can prevent duplication, benefit from one another, and maximize the synergistic effects of performance improvements.

Implications for a DPU Manager. The basic procedure for use of existing performance improvement programs and tools begins with the awareness on the part of a DPU manager that DPU performance is not meeting expectations. Indicators may include an exception or "delta" identified from the tracking of results against expectations, a projected "shortfall", an increased risk of failure, or an increase in customer requirements. Whatever the cause, the DPU manager first identifies a need to improve DPU performance.

At this point, the DPU manager will do a preliminary analysis in an attempt to identify the possible reason for poor performance, or at least the general nature of possible cause. If the cause or solution for the performance problem cannot be identified readily, the manager may contact the DPM Service Center for necessary consultation, advice, and assistance in selecting and using appropriate programs and tools to define the improvement need. If the cause of, or solution for, the performance problem can be identified, the manager will contact the service center to select the proper programs and tools for developing and implementing the performance improvement solution. As the improvement effort proceeds through the discovery, analysis, and solution phases, the manager may need to consult with the service center for additional support in using the improvement programs and tools. The service center will provide assistance in the application and use of the programs and tools and in arranging for necessary training. The service center may provide assistance directly, or may refer users to specific program or tool proponents for assistance. The service center may also refer users to other, similar improvement efforts that have been done or are being done so as to promote synergistic efforts. As a DPU progresses through its performance enhancement effort, whether small or large, personnel working on the effort may contact the service center for continuing consultation, advice, and assistance regarding DPM generally, and the use of performance improvement programs and tools specifically.

5.4 Relationship to Performance Measures, Expectations, and Assessments

Under the traditional Productivity Program, there were requirements to employ productivity measurements and standards -- particularly work measurements and labor standards. While these are still useful and important, they are only one aspect of managing performance. And work measurements and labor standards apply only to limited functions within the DoD -- mainly to depot maintenance. Under the GPRA, Defense Performance Units are required to develop performance plans which include objective measures and expectations for products and services to be produced by each DPU in fulfilling its mission. Therefore, under DPM, "productivity measurement and standards" is expanded to be "performance measurement and performance expectations".

Performance Measurement "refers to measuring the performance of a program, a function, or a process." The term "performance" covers the work an organization performs in converting inputs to outputs to outcomes". [3] Performance can be measured in terms of productivity (efficiency), Quality (effectiveness/output), and work. Defense Performance Management integrates these three aspects into a holistic approach to determining the accomplishment of a Defense Performance Unit.

To fulfill the GPRA requirements for performance plans, a certain amount of effort needs to be dedicated up-front in defining and determining the characteristics of performance

[3] Implementation of the Government Performance and Results Act (GPRA)--CFO Council/May 1995, Appendix C, Lexicon of GPRA Terms

measurements and expectations. A generic model will be required to address the preparation of a performance plan and its use in measuring and assessing performance results. To extend the adage: "you can't manage what you can't measure and you can't measure what you can't define."

Part of defining a DPU's performance measures and expectations is determining specific content and values for the various aspects of performance. This involves determining the nature of products and services to be produced, what resources will be needed, what measures to use and how to measure, and most importantly, what quantitative values are to be attached to the various items to indicate the level of expected achievement for the DPU.

While a DoD Comptroller memorandum, "Performance Budgeting" (reference (70)) and Department of Treasury Guide, "Performance Measurement Guide" (reference(72)) have made admirable efforts in defining and explaining terms involved in performance measurement and expectations, more definitive and common definitions will be required for full implementation of the GPRA. Definitions for performance measurement and expectation terms as they are used in this report are found in Appendix D. Terms defined there include "performance measurement," "measure," "metric," "indices," "value," "performance measure," "expectation," "annual performance plan," "performance goals," performance indicators," "objectives," "standards," "labor standards," "benchmarks," and "baseline." In addition, follow-on effort will be required to develop procedures and formats for use by DPUs in understanding and using performance measures and expectations and in defining and determining their particular performance measurements and expectations.

This sub-section will describe the role and flow of performance measurements and expectations throughout the processes of Defense Performance Management

5.4.1 Develop Operational Plans

Planning begins with identification of the products/services to be produced by the DPU, along with any intermediate products/services. Next, it is decided what measures will be used to identify and count each product and service. Performance measures can be determined by several different factors such as efficiency, effectiveness (time, quantity, quality, customer satisfaction), work process and outcomes. Then, for each measure, target values will be determined. (These values may be based on benchmarks, baselines, readiness requirements, customer requirements, assigned values, etc..) These values are the standards or expectations that indicate successful performance and against which the DPU's performance results will be compared and assessed. As such, this activity focuses on the development of performance expectations (plans, objectives, projections).

Not only should expectations and measures for the final products and services be established, it is also important to establish intermediate or component products and services along with expectations for each of them. In addition, customer requirements

and/or deliverable specifics from taskings, work orders, and/or contracts constitute expectations for a DPU.

The challenges at this stage in the process are 1) identifying particular, distinct, measurable products/services; 2) selecting effective and meaningful measures for each; and 3) deciding upon realistic target values for each measure. For many DoD managers, this will be new and difficult--a whole new way of doing their work. But without these, there is no way of knowing what success means for the DPU, no way of knowing if the DPU's performance has been successful or not, and, more importantly, there is no way objectively to manage the performance of the DPU.

Inputs to this process of determining performance measures and expectations will come from a DPU's superior DPU, from its customers, from superior expectations and guidance, and from its management team. Another helpful source are the DPU's employees--the ones who will be producing the expected products and services. They can provide a reality check on measures and expectations, if not being the source of this information itself.

Because there are so many variables involved in the input, process, and output phases, and because they are so complex and interrelated, measurements might be best stated as a value range rather than a single fixed value.

Work Measurement and Labor Standards (WM/LS), while not used to define expectations directly, can be integral factors in developing performance measures and expectations. WM/LS comprise standard requirements for units of performance. While the traditional area of WM/LS is "production line" type work (so-called "blue collar" or manual "labor-intensive" work), WM/LS is expanded to include "office" work (so-called "white collar" or "thinking-intensive" work) as well. These can be used in estimating and evaluating target values for a DPU's performance (e.g. with the given the labor standards for tank maintenance and the given resources of our DPU, how many tanks can we expect to maintain each month and at what cost?) As such, they are very useful in preparing work force requirements, work estimates, bids, contracts, and work plans and schedules--all part of developing operational plans.

When using WM/LS, initially, areas of the DPU's work which are most applicable for WM/LS need to be determined. Next, it must be determined if it would be effective and efficient to use WM/LS for these areas. Such determination will involve deciding which labor standards are available, are they reliable, are they applicable, or do they have be developed or updated, are they automated, are they easy to use, etc.. Once it is determined to use labor standards and the appropriate standards have been selected, they must be used consistently in planning, managing day-to-day operations, and in assessing work. Variance analysis and updating of the labor standards will need be included in the DPU's plans.

In addition to the performance measures, the development of operational plans produces specifics in the areas of taskings, programs, budgets, and guidance. Once established, these items are used collectively both to guide the execution of the DPU's work and to assess the actual performance of tasks.

Based upon such expectations, work is broken down, resourced, and scheduled by a manager. In order to meet these expectations, all other aspects of planning are completed accordingly.

Once measures and expectations have been established, they become the controls for the activity of producing the expected results and for assessing the results.

5.4.2 Execute Plans

Employees perform the work of the DPU to produce products and services according to the plans which have been prepared. The measures and expectations, particularly the component aspects, inform and guide the day-to-day performance of the employees. Managers and employees track the DPU's progress against the expectations.

5.4.3 Assess Performance

This activity focuses on comparing actual performance against performance expectations. The first step is to measure the performance results achieved by executing the plans. The results are measured according to the performance measures stated in the performance plan. The measured values for the results are compared to the values of the expected results -- actual performance data vs. expected performance data. This comparison is monitored on a regular basis. As long as the actual performance results are within an acceptable range of expectation (planned) values, nothing is required but to continue the good work.

If the actual results are different from the expected results (an "exception" or a "delta"), then attention needs to be given to the situation which is producing unacceptable results. These results and related data are analyzed in an effort to determine the extent and cause of the poor performance, as well as all the factors that are involved. This may include an analysis of the measures, standards, and expectations involved in measuring the various aspects performance to see if they are accurate, reliable, realistic, etc.

It is also beneficial to analyze a work process and its results as part of a regularly scheduled program of inspections to determine that work processes are functioning properly and to discover any trends or problems which could lead to less than expected performance. All analysis is done in light of the established performance measures and expectations.

Based upon the results of the analysis, the performance and its results are evaluated to determine the nature and extent of the problem, the seriousness of the problem, its implications, possible responses, etc.. There will also be times when normal, successful

performance results are evaluated to understand more clearly the proper functioning of the process or the basis of the fine results. In all cases, evaluation is done in terms of the established performance measures and expectations.

The final step in assessing actual performance results is to make recommendations for correcting the problem and bringing performance back in line with the performance expectations.

Such assessment (monitor, analyze, evaluation, and recommend) can be made at all levels of performance from DoD as a whole, through various organizational levels, to all sizes of work units, and finally to each individual. In each case, assessment is made in terms of the established (planned) performance measures and expectations.

A vital task which occurs during this phase is performing a variance analysis. This analysis assesses the measures, standards and expectations themselves to determine their viability as accurate gauges of performance. This is particularly necessary for labor standards, but it can apply to all performance measures and expectations. If a significant variance occurs between what is expected and what is being produced, the situation must be analyzed to ascertain the cause. Is the standard being applied correctly? Are all the pre-conditions being met? Are all procedures being performed properly? Is the work being measured properly? Is the standard still accurate, realistic, and reliable? Based on the evaluation of the results of the analysis, corrective action can be recommended -- up to and including redefining performance measures and expectations (standards). Variance analysis of standards/expectations needs to be scheduled on a regular basis.

The degree and frequency of performance assessment needs to be considered by each manager. Assessment may range from daily tracking of work results to major reviews and inspections. A major benefit of more frequent assessment is regular reports on the status the performance which provide management the opportunity to make any necessary corrective adjustments to meet the performance goals (expectations) instead of waiting to the end of the activity when all opportunity for improvement is past.

Performance by the workers can be evaluated, and the results can be applied toward the individual, department, directorate, component, etc. It is important to realize that the lowest level, the individual, is the starting point for accumulating performance data. The data can be collected and displayed at the appropriate level of the organization, dependent on the needs of the requester. The only time when an individual's specific performance should be addressed is during that individual's performance appraisal.

5.4.4 Enhance Performance

The old adage states "if it isn't broke, don't fix it". But if something is broken, then it is best to fix it. Annual performance plans, along with performance measures and expectations, provide an objective means for determining whether something is "broken" or not. If actual performance results do not measure up to the stated plans and

expectations -- as revealed in assessment -- then something is "broken". Enhancing Performance is the activity of "fixing what is broke". It is the activity of improving performance of a DPU so that it performs at the planned/expected level. (It should be noted that an increase in performance output expectations by one's superior or customer, or a decrease in any of the factors of production [resources, time, equipment, etc.] will create a "delta" between expectations and actual results, and result in a need to make some type of improvement.)

Not only do performance measures and expectations (both end indicators/values as well as component and incremental measures, standards, and values) indicate that something is not functioning properly, they also provide the goal for improvement efforts and the means for evaluating improvement efforts.

For WM/LS, the measures and/or standards themselves may be "broken". (That is, performance results are not being measured properly or are being compared to an inappropriate standard, thus providing false performance results.) As such, they can become the object of improvement efforts. If variance analysis determines a problem with measures and/or standards, then a special improvement effort would be performed to update the WM/LS. This involves streamlining/improving process procedures, measuring and validating the proper measures/standards, updating measures/standards, and applying the new measures/standards.

This improvement of measures and standards is not limited to WM/LS. All expectations, all measures and standards, are subject to being "broken" -- that is, providing inaccurate measurements or unrealistic standards and expectations. Whether assessment indicates that measures and expectations may be a problem or not, all measures and expectations should be reviewed periodically for reliability, and improved (updated) as needed. One of the results of such performance measures and expectation improvement may be a whole new set of measures and standards for the products, services, and/or processes in question.

Performance measures and expectations play a particular role within the "Enhance Performance" activity. Each improvement effort will establish performance measures and expectations for itself -- "how will it be known that the improvement effort was successful?" Because a manager has precious little time, money, and manpower above and beyond normal performance requirements to expend upon improvements, such resources must be used with extreme efficiency and effectiveness in achieving real improvement (fix as quickly as possible only that which is broken and get performance back up to expectations). Given the fact that improvement efforts can spend extensive amounts of time and money in researching, studying, analyzing, and planning for improvements, close attention must be given to preparing the performance plan, measures and expectations for each improvement effort -- be it one day or five years.

5.4.5 Support

The primary challenge for managers in a performance-oriented environment is the development of performance plans -- especially developing performance measures and expectations that are specific, clear, measurable, and quantifiable. Assistance (information, guidance, consultation, training, and tools) will be provided for managers in the development and use of performance plans.

In terms of performance measurement and expectation tools, the "Support Performance Management" activity , as part of the improvement tools inventory, provides the means for developing, recording, and reporting common data and information regarding measurement and expectations. For the DoD, common terminology for performance measurements and expectations will be provided. Most importantly, a common, automated means for developing performance measures and expectations will support each DPU manager in preparing their performance plans and expectations. Once these plans and expectations have been created, the automated system will then be used to resource and schedule the DPU's work and to track the DPU's performance against the plans and expectations. With quantifiable indicators and values, an automated performance support system can monitor performance and automatically alert a manager to exceptions in performance results.

With common terminology, procedures, applications and data for performance measurement and expectations, common reporting of performance results/status will be available as a by-product of managing a DPU. Reports will not be "sent" anywhere. Those with-a-need-to-know will be able to "get" reports whenever a report is needed. Furthermore, performance expectation and result data will be integrated into Executive Decision and Support systems and into the PPBS system.

In this way, support of performance management enables a manager to do quality planning (establishing clear and meaningful measures and expectations), to share these expectations with others, and to have automated support in managing the DPU's performance to achieve these expectations. Because most of the monitoring, assessment, and reporting is automatic, a manager is freed up to spend more time one the other managerial responsibilities--especially dealing with personnel and customers.

For processes that make use of WM/LS, a common set of automated tools for selecting and/or developing, using, and updating of WM/LS will be provided. Such applications will assist managers in preparing estimates and projections of time and cost for work, establishing resource requirements, and scheduling work and resources. Additionally, such automated systems will enable a manager to record and monitor performance, do assessments, perform variance analysis, and report on work accomplishments.

In areas where performance either benefits, or could benefit, from the use of WM/LS, research and studies into WM/LS may be conducted to increase the effectiveness of their development and use.

Though managing performance seems rather straight-forward, there are many variables and complexities involved. The exercise of performance management is far from simple and straight-forward. Managers will need all the support (guidance, "help desk" service, encouragement, information, advice, and the like) that they can get. Automated tools which assist them with their day-to-day management activities (not add to the day's work) is the biggest support that can be provided.

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FIGURE 7. ACTIVE DOD MANAGEMENT IMPROVEMENT PROGRAMS AND TOOLS LISTED BY THE DEFENSE PERFORMANCE MANAGEMENT SUBPROCESSES TO WHICH THEY CHIEFLY RELATE.

Programs and Tools	*A1 Plan*	*A2 Execute*	*A3 Assess*	*A4 Enhance*	*A5 Support*
"Productivity Category"					
Government Performance and Results Act (GPRA)	X				
National Performance Review (NPR)			X		
Defense Performance Review (DPR)				X	
Acquisition Reform				X	
Corporate Information Management (CIM)				X	
Total Quality Management (TQM)					X
Defense Management Review (DMR)				X	
DoD Productivity Program					X
Productivity Enhancement				X	
Productivity Enhancing Capital Investment (PECI)				X	
Efficiency Reviews				X	
Workforce Motivation				X	
Beneficial Suggestions/Awards				X	
IDEF Model				X	
Baldrige Criteria			X		
President's Quality Award			X		
"Budget/Financial Category"					
Chief Financial Officers Act (CFO)	X				
Federal Managers' Financial Integrity Act (FMFIA)	X				
Performance Budgeting	X				
Defense Business Operations Fund (DBOF)	X				
"Cost Category"					
Program Evaluation and Economic Analysis			X		
Functional Economic Analysis (FEA)			X		
Activity Based Costing (ABC)			X		
Cost and Operational Effectiveness Analysis (COEA)			X		
Value Engineering				X	
Design to Cost				X	
Should Cost Program				X	
Independent Cost Program				X	

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FIGURE 8. CANCELED DOD MANAGEMENT IMPROVEMENT PROGRAMS AND TOOLS LISTED BY DEFENSE PERFORMANCE MANAGEMENT SUBPROCESSES TO WHICH THEY CHIEFLY RELATE.

Programs and Tools	*A1 Plan*	*A2 Execute*	*A3 Assess*	*A4 Enhance*	*A5 Support*
"Canceled Programs and Tools Category"					
Management by Objective (MBO)	X				
Model Installation				X	
Federal Productivity and Quality Improvement Program					X
Zero Based Budgeting	X				
President's Management Program	X				
Improved Manpower Controls and Utilization	X				
Manpower Controls and Utilization Program					X
Cost Reduction and Management Improvement Program	X				
Management Improvement Program for All Government Operations	X				
Management Review and Improvement Program			X		
Presidential Management Initiatives		X			
Management Improvement and Evaluation in the Executive Branch			X		

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FIGURE 9. CORE REQUIREMENTS OF DOD MANAGEMENT IMPROVEMENT PROGRAMS LISTED BY THE DEFENSE PERFORMANCE MANAGEMENT SUBPROCESS TO WHICH THEY CHIEFLY RELATE.

Core Requirement	*A1 Plan*	*A2 Execute*	*A3 Assess*	*A4 Enhance*	*A5 Support*
Commitment at Top	X				
Involve Employee (Empower)				X	
Customer Orientated		X			
Continuous Improvement				X	
Delegate Responsibility		X			
Encourage Accountability			X		
Mission/Goal Focused	X				
Develop Plan/Strategy	X				
Prioritize Functions				X	
Use Performance Measures			X		
Link Performance-Resources		X			
Identify Resources		X			
Maximize Resources	X				
Quality Focused				X	
Reduce Costs				X	
Reduce Paper/Regulations				X	
Use Existing Data			X		
Report Results					X
Validate/Follow-up					X

6. RECOMMENDATIONS AND NEXT STEPS

6.1 Methodology

Based upon the analysis of the current situation, the redesigned "Manage Performance" concept and the application scenarios presented above, the Defense Productivity Process Improvement Project (DPPI) working team considered what was necessary to establish the redesigned Defense Performance Management Initiative. The results of this consideration are presented as the team's recommendations for the implementation of the redesign of Defense Productivity as Defense Performance Management. There are three recommendations for action at the DoD programmatic level; there is one recommendation for a pioneering prototype; and there is one recommendation for enhancing a particular aspect of productivity. For each recommendation there are suggested next steps for implementing the recommendation.

6.2 DoD-wide Programmatic Shift

The proposed shift from Defense Productivity (Sec. 2) to Defense Performance Management (Sec. 4-5) is a significant and fundamental change in the way of doing business for the DoD -- this shift is already underway. Several programmatic shifts will be required to establish this redesign from productivity to performance as the way DoD will manage and enhance its work. This shift to Defense Performance Management requires DoD Components to assume new programmatic responsibilities, not just for their Component, but on behalf of all DoD Components. While the shifts from "following the regulations" to "producing results" and from just thinking "unit cost" to managing for total performance are fundamental shifts in the style and mode of management, such a shifts require solid programmatic structures in order to succeed. Recommendations for creating the necessary programmatic structures include (a) establish a "focal point" for each level-one DPM activity; (b) reissue the DoD Directive 5010.31 to authorize the foundation policy; and (c) reissue instructions to adjust all productivity programs to reflect the shift to DPM.

6.2.1 Establish a "Focal Emphasis and Focal Point" for each Defense Performance Management activity

It is recommended that for each of the major Defense Performance Management activities (plan, execute, assess, enhance and support) a DoD "focal emphasis and focal point" be established. The "DPM focal point" would be an Under Secretary of Defense with responsibility for supporting and coordinating that aspect of Defense Performance Management over all of DoD--primarily through the execution of the "DPM focal emphasis". Each "DPM focal point" would develop a plan to support their assigned DPM activity plus their "focal emphasis DoD-wide. This "DPM focal point" would also coordinate all DoD efforts for this assigned activity.

- For "Develop Operational Plans, Programs, and Budgets" (A1) it is recommended that an Executive/Management Decision Support System (EMDSS) be developed as

part of the PPBS (either as an update or as an augmentation). This system would, among other things, provide common terminology for performance management and budgeting; common measures, metrics, indices for performance measurement; common procedures for developing performance plans, measures, and expectations; common data and reporting requirements; common applications for planning, budgeting, resourcing, scheduling, tracking, assessing, evaluating, and reporting in support of a manager's day to day work; a common "virtual" data base; and electronic communication/Internet connectivity for sharing of performance information. The recommended "DPM focal point" for planning is the USD(C).

- For "Execute Operational Plans, Programs, and Budgets" (A2) it is recommended that each DoD component operate as a "DPM focal point" for execution. Each component would provide the support for managers as they carried out their plans and programs on a day-to-day basis. One major aspect of this support would be the EMDSS. Therefore, the component would be responsible for seeing that their requirements were included in the EMDSS and that all their managers had access to it.

- For "Assess Performance" (A3) it is recommended that USD(P&R) be the "DPM focal point" for assessment since the main performance of DoD is maintaining adequate forces and readiness to defend the nation. The "focal emphasis" would be on developing a plan to support managers in assessing (doing regular, proactive oversight and accountability) the performance of their DPU(s). This would involve major coordination with the "planning focal point" in the development of the EMDSS which would provide the automated support for assessing and reporting performance as well as for assessing and deciding force and readiness requirements. It is also recommended that this "focal point" develop a positive incentive policy for improving performance.

- For "Enhance Performance" (A4) it is recommended that USD(A&T) be the "DPM focal point" for enhancement. The "focal emphasis" would be to develop a plan to support managers in improving the performance of their DPU(s) and to coordinate this effort DoD-wide. This would involve close coordination with DA&M (see next bullet below) in developing and supporting a continuous performance improvement programmatic cycle as part of on-going management and which incorporates the integrated and coordinated inventory of improvement programs and tools. Besides supporting DPU managers, this "DPM focal point" would coordinate major DoD-wide enhancement via major research and development, procurements, and new information systems.

- For "Support Performance Management" (A5) it is recommended that the Director of Administration and Management (DA&M) be the "DPM Focal Point" for "Support Performance Management". The "focal emphasis" would be coordination of the various improvement programs and tools (a "one-stop-retail-shopping" for

improvement programs and tools), promoting "manage performance", and providing guidance and 'help desk' assistance. This "DPM Focal Point" would also update training to accommodate the shift to Defense Performance Management along with developing a training plan. This "DPM Focal Point" would begin by developing a support plan for promoting, training, coordinating, and researching Defense Performance Management.

The next steps for implementing this recommendation include:

- Drafting the requirements and responsibilities of each "DPM Focal Point" and "DPM Focal Emphasis", with supporting rationale for each USD to assume this responsibility.
- Getting feedback and input on the draft requirements and responsibilities.
- Sending forward proper instruments to implement this recommendation.

6.2.2 Reissue DoD Directive 5010.31

It is recommended that DoD Directive 5010.31 be reissued. This would apply Defense Performance Management to the DoD by stating the purpose and scope, setting forth the policies, and assigning responsibilities. This would provide the necessary foundation and authorization to proceed with the implementation of the other aspects and recommendations of DPM.

The next steps for implementing this recommendation include:

- Drafting the new directive with the Components.
- Coordinating the new directive within the Department.
- Providing guidance for implementation.

6.2.3 Reissue Instructions related to DD 5010.31

It is recommended that all Productivity Programs be adjusted, by means of new instructions, to reflect the shift to Defense Performance Management.

In particular, it is recommended that the traditional PECI program that provided funding for improving significant (capital) items will be expanded to include funding for the improvement of all aspects of performance. Under a new Unified Performance Enhancing Capital Investment (UPECI) program, funding for process improvement, system improvement/ development, organizational improvement, skill training, etc. as well as for equipment and facilities, will be provided through a DPM oriented budget process and a unified improvement funding program .

The Productivity Program instructions (DoDI 5010.34, 5010.36, 5010.37, 5010.39) will be assessed for continued applicability within Defense Performance Management . Then each instruction, as deemed appropriate, will be referred to the appropriate USD for adjustment and (re)issuing or it will be canceled.

The next steps of action for implementing this recommendation include:

- Assessing existing productivity programs and instructions in light of Defense Performance Management and the new DD 5010.31.
- Identifying the instructions to be canceled.
- Identifying the instructions to be adjusted for (re)issue and referring them to appropriate agency for (re)issue.
- Writing new instructions.
- Coordinating the new instruction(s).
- Supporting the new instruction(s) with related guidance and technical assistance.

6.3 Apply DPM to Civilian Personnel Management Support (CPMS).

It is recommended that the DPM model be prototyped and tested by DPSO in applying the DPM model to their own specific functional area (i.e. HRM/CPMS). The implementation of this prototype will be used as CPMS's compliance to the GPRA.

The next steps of action for implementing this recommendation include:

- Designing processes and procedures for:
  1) developing performance plans (including measures and expectations),
  2) measuring performance results, and
  3) assessing performance.
  This would be designed for use by CPMS as part of an improvement design package.
- Identifying, designing and developing related information system requirements (information, data, and physical requirements) for DPM in CPMS as part of an improvement design package.
- Using this design, produce and implement a prototype of DPM procedures and a supporting information/decision system for the HRM/CPMS environment.

- After a period of use, this prototype will be evaluated and enhanced to validate its effectiveness.

6.4 Continue DPPI Project to Work Measurement/Labor Standard (third) level

It is recommended that the DPPI Project continue, with contract support, onto the next (third) level decomposition to develop an "improvement design package" for Work Measurement/Labor Standards (WM/LS) management. The two major components of the "improvement design package" will be a redesigned WM/LS management process and the general architecture for a new automated information system (AIS) in support of the new WM/LS process. The focus of this application of the DPM model will be the traditional area of WM/LS which is mainly used in depot maintenance community.

The next steps of action for implementing this recommendation include:

- Establishing a steering committee to guide this task and a working team to provide subject matter expertise for this task.

- Developing task plans and updating project plan for the design of improved WM/LS procedures and information systems.

- Conducting and producing a Baseline Analysis of WM/LS process and procedures, to include models, case for change, current costs, and recommendations for improvements.

- Designing improved WM/LS process and procedures which will be both efficient and effective.

- Preparing a general systems architecture for an Automated Information System in support of the improved WM/LS process and procedures. This system will address both automated industrial engineering techniques and EIS/DSS in support of depot managers. This architecture will address legacy systems, the migration to a target system(s), and the integration of WM/LS data into existing resource management systems (PPBS, for example).

- Developing alternative improvement packages composed of various process and system components as well as levels of implementation (e.g. long range, short range, complex, simple, expensive, inexpensive, centralized, decentralize, etc.) along with feasibility studies for each.

- Selecting a WM/LS improvement package to validate and implement.

6.5 Discussion

The issuing of a new policy (DoDD 5010.31) for Defense Performance Management will provide the foundation for establishing and implementing the DPM initiative.

DPM seeks to support the local commander and all managers by enabling them to identify and concentrate upon the most important mission items with improvement management and improved performance.

A DoD Executive/Management Decision Support System will be developed to assist and support the preparation of performance plans, the tracking of performance results, the assessing of performance results, and the integration of performance management into the PPBS. The EMDSS will provide the means for the practical and effective use of DPM. Without such a tool, GPRA will just be another regulation which promises much, delivers little, and generally get in the way of getting work done. A prototype application of DPM in CPMS will provide a demonstration test case and a first step toward an EMDSS.

Continuing the process improvement effort in the area of WM/LS will provide a cost-effective way to save significant resources in "high volume, high value" work, such as performed at maintenance depots. Furthermore, it will address directly the findings and recommendations of the DoD IG Audit Report No. 95-049 (reference (27)) as agreed by the Under Secretary of Defense for Personnel and Readiness (USD(P&R)).

APPENDICES

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APPENDIX D: PERFORMANCE MEASUREMENT AND EXPECTATION DEFINITIONS

This Appendix provides the definition of some common terms used throughout the performance management process. These definitions provide a basis particularly for the discussion on Performance Measurement and Expectations. The terms are grouped by performance measurement and performance expectations. The performance measurement sub-section identifies key terms which are used in measuring and/or providing measurement information. The performance expectations sub-section addresses some of the terms which are used when goals, objectives, and plans are being developed and the sources of data are being identified.

1. Performance Measurement

Performance is the accomplishment of actions that transform inputs (through a process) to outputs and outcomes. The term "performance" encompasses the work performed by a Defense Performance Unit in converting inputs to outputs to outcomes. Inputs, process, outputs and outcomes can therefore be considered the "performance continuum," that is, the progression of performance actions.

Performance measurement is a process of using measures and metrics by which a program objectively counts its mission accomplishments through the delivery of products, services, or processes. Performance measurement includes indicating what items will be measured, what measures will be used to measure each item, and the procedures for measuring each item.

Measure. Measure is a type of indicator used to count and calculate input, output, and outcome of performance. A measure may be a single indicator or a combination of indicators in a defined relationship. A measure may be a large category or a specific sub-type of a category. Examples of a measure are weight, time, unit count, size, volume, dollar value, weight per time, dollar value per unit, man-hours, etc.. Basically, a measure is the way the products/services will be marked off so that it can be determined exactly what was produced. A complete measure would also include the metric to be used.

Metric. A metric is a specific type of distinct units within a measure which are used to count items of input and output. Examples of a metric are pounds, grams, feet, meters, days, months, dollars(in thousands), etc..

Indices. Indices are predetermined measures and values for indicating the relatively positive or negative results of performance. They are used as a barometer or a scale for comparison of performance efforts, noting trends, predicting performance, etc..

Value. Value is a numerical quantity assigned or computed.

Algorithm. A set of two or more measured values in specific order, steps, and relationships for a mathematical calculation to determine composite measurement value for inputs, outputs and outcomes. An algorithm may be used as a complex measure, the result of which is a measured value.

Performance Measures. Performance measures are the items to be counted in determining successful performance, along with the measures used for counting each item. Performance measures include:

- Input measures which quantify the material and materiel resources, time, personnel, etc., utilized in a process.
- Output measures which quantify goods or services produced.
- Process measures which quantify the actions used to produce products or services.
- Efficiency measure which is the ratio of inputs to outputs (I/O); traditionally expressed as the amount of input (total cost) per unit of output, sometimes referred to as "unit cost". An example is "cost per transaction."
- Effectiveness measures are the measures of outputs in terms of timeliness, quantity, customer satisfaction, and/or quality (accuracy and conformance to requirements). Sometimes "quality" is used (in a more general sense) interchangeably with "effectiveness".
- Outcome measures which assess the results, effects or impact of an activity compared to its intended purpose.

2. Expectations

Performance expectations are statements of the quantifiable products and/or services which a Defense Performance Unit expects to produce over a given period of performance. Performance expectations are the stated measurable objectives which define successful performance for a Defense Performance Unit. As such, they are the standards against which performance is managed, measured, and evaluated. Expectations for performance, as a comprehensive concept, may be set forth as a combination of measures and values for efficiency, effectiveness, work processes, and outcomes.

While general program goals, long-range strategic plans, legislation objectives, and/or intended purposes ("outcome") can be understood as "expectations", they are often too general to be measured, involve subjective assessment, and/or include factors beyond a manager's control. As such, they are not too useful as standards in managing performance. Therefore "performance expectations" for Defense Performance Management are primarily set forth in GPRA Annual Performance Plans as performance goals and indicators. For smaller Defense Performance Units (which are not required to prepare Annual Performance Plans under GPRA) and for periods of time less than a year, expectations will be set for work breakdown tasks, sub-products/services, and/or incremental periods of time.

Annual Performance Plans. Must be:

- consistent with an agencies strategic plan;
- establish quantifiable performance goals;
- define the level of performance to be achieved during the budget year; and
- describe the operational processes and resources required to meet the performance goals.

While GPRA requires such a plan for each agency, every Defense Performance Unit should have an annual performance plan of some degree, including, at a minimum, performance goals.

Performance Goal. A performance goal is a target level of performance expressed as a tangible, measurable objective, against which actual achievements can be compared. Thus, these are the targets (expectations) set by the program for specific reporting periods. A performance goal is a statement composed of two components: an indicator and a target value. [For example: "to increase the immunization rates for two-year olds by 40% by 1999" includes the ***indicator*** -- immunization rates for two-year olds, and the ***target value*** -- to increase rates by 40% (over some beginning rate) by 1999.]

Performance Indicator. A performance indicator is a particular characteristic used to measure outputs or outcomes. This includes the product or service to be measured, the measure/metrics to be used to measure it, and the target value to be achieved for the indicator. Indicators are the signs that point to success or failure in performance and answer the question: "How will we know when we have been successful?" As such, it is a statement of the performance expected by a Defense Performance Unit. "Performance indicators" refer to what specifically is to be measured for each aspect of performance, i.e., the specific numerical measurements that are to be made, such as the "number of customer complaints."

Objectives. An objective is another term for "performance goals". Some planners begin with general and strategic goals which they break down into specific or tactical objectives. In Defense Performance Management, an objective is a statement for a Defense Performance Unit of what is to be produced, how it is to be measured, and the target values for the production/service level to be achieved.

Standards. Standards are a set of pre-defined measures and predetermined values for specific products/services/processes which are used to indicate successful performance. As defined, expectations (performance goals and indicators) are standards for measuring performance, and as such are the primary standards by which performance will be measured.

There are other subsets of standards which are used in measuring various components or aspects of performance and which indicate, at intermediate or in-process measurements, whether or not performance is proceeding according to plan. These specific sets of standards can also be used in planning and establishing target levels of performance for a

Defense Performance Unit. Examples of such standards include labor standards, industrial standards, baselines, and benchmarks.

Labor Standards. Labor standards are a set of specific quantitative values generally accepted as the amount of labor (time) required to complete a specific task. These standards are used to estimate/plan the labor and scheduling, costing, capacity, and output for given products and services.

Benchmarks. Benchmarks are comparative standard for evaluating accomplishments against known exemplars of excellence. A benchmark is a targeted goal that is beyond current capabilities, but for which the organization is striving.

Baselines. A baseline a set of performance indicators whose values have been derived from actual results of past performances and against which expected performance levels will be set and measured in terms of increments of increase or decrease from these base levels. (For example: last year we delivered 70% of our orders on time; this year we will deliver 80% of our orders on time.)

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APPENDIX F: ACRONYMS

AFAA	Air Force Audit Agency
AFHRL	Air Force Human Resources Laboratory
AIIE	American Institute of Industrial Engineers, Inc.
AMEC	Army Management Engineering College
ASD(FM&P)	Assistant Secretary of Defense for Force Management and Personnel
ASD(FMP)	Assistant Secretary of Defense for Force Management Policy
ASD(MRA&L)	Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics
CSC	Civil Service Commission
DAS	Defense Audit Service
DASD(CPP)	Deputy Assistant Secretary of Defense for Civilian Personnel Policy
DCPMS	Department of Defense Civilian Personnel Management Service
DISA	Defense Information Systems Agency
DoD	Department of Defense
DoD IG	Department of Defense Inspector General
DPPI	Defense Productivity Process Improvement
DPPO	Defense Productivity Program Office
DPR	Defense Performance Review
DPSO	Defense Productivity Support Office
DPU	Defense Performance Unit
FYDP	Five Year Defense Program
GAO	General Accounting Office
GPRA	Government Performance and Results Act
ICOM	Inputs, Controls, Outputs, and Mechanisms
IDA	Institute for Defense Analyses
IM	Information Management
LMI	Logistics Management Institute, Inc.
MIL-STD	Military Standard
NADEP	Naval Aviation Depot
NAS	Naval Audit Service
NAVAIR	Naval Air Systems Command
NPR	National Performance Review
NPS	Naval Postgraduate School
OASD(FM&P)	Office of the Assistant Secretary of Defense for Force Management and Personnel
OASD(FMP)	Office of the Assistant Secretary of Defense for Force Management Policy
OASD(FMP)	Office of the Assistant Secretary of Defense for Force Management Policy
ODASD(CPP)	Office of the Deputy Assistant Secretary of Defense for Civilian Personnel Policy
OMB	Office of Management and Budget
OPM	Office of Personnel Management
OSD	Office of the Secretary of Defense
OUSD(C)	Office of the Under Secretary of Defense (Comptroller)
OUSD(P&R)	Office of the Under Secretary of Defense for Personnel and Readiness
PECI	Productivity Enhancing Capital Investment
PIF	Productivity Investment Fund
PPBS	Planning, Programming, and Budgeting System
QM	Quality Management
USD(A&T)	Under Secretary of Defense for Acquisition and Technology
USD(C)	Under Secretary of Defense (Comptroller)
USD(P&R)	Under Secretary of Defense for Personnel and Readiness
WM/LS	Work Measurement and Labor Standards